Knowledge
is
SAFETY

PUBLISHERS' NOTICE.

THE extraordinary popularity achieved and maintained by Dr GEO. H. NAPHEYS' *Physical Life of Woman*, places it beyond question among the classics of the English language. Convinced of its high literary as well as medical value, the present publishers have spared no pains or expense to place it before the public in the most attractive style.

The *text* has been most carefully revised and rewritten by the eminent author himself; extensive additions of important matter, the fruit of three more years devoted to the study of the subject and the wants of readers, have been incorporated. In type, paper and binding, the most appropriate materials have been selected. And, to satisfy the repeated requests of purchasers, permission has been obtained from the author to insert his portrait, engraved on steel by one of the most skilful London artists.

With these additions, the *Physical Life of Woman* comes before the public with all the novelty and freshness of a new book, and also with the solid and substantial reputation for practical worth which its sales of nearly *fifty thousand* copies a year for *three* years guarantee to it.

We add a

SYNOPSIS OF THE BOOK.

It treats of woman in her three great positions in life, as the MAIDEN, the WIFE, and the MOTHER.

Under the first of these is discussed the mysterious change she undergoes when ripening from the indifferent girl to the tender and sensitive virgin. The dangers she runs at this critical epoch are carefully noted, and the rules to prevent and remedy them clearly set forth. The all-absorbing topic of *Love* is next treated

of in a pure and elevated style, but strictly from the physician's point of view, and many salutary hints are given to direct the passion to noble ends and in proper channels, and to teach the youthful reader how to shun unfortunate unions.

In the part addressed to *Wives* the health of the married couple is first considered as being essential to their happiness. Plainly, yet delicately, the rules that should govern them are laid down; the absence of children and their excessive numbers are both mentioned, as requiring appropriate correction, and an unsparing hand is laid upon certain prevalent social vices. A full discussion of the important topic of the inheritance of physical and mental traits will be found, and two most thorough and practical chapters on Pregnancy and Confinement are added, most invaluable to every young wife.

The duties of the *Mother* are next set forth, in nursing her child, and taking proper care of it, in training its budding powers, and also in giving her own attention to it in some of the more common diseases to which children are subject.

The sections devoted to *Health in Marriage* will be peculiarly welcome to many women suffering in health from they know not what exact cause, but really from some of those inward or local weaknesses which are here described. While to very many others who are approaching or about passing through the critical epoch of the *Change of Life*, the full and well-considered views of the author in the part devoted to that period will be read with benefit and gratitude.

A carefully prepared Index and a copious list of authorities close the volume.

Yours cordially
Geo. H. Hoskins M.

THE

PHYSICAL LIFE OF WOMAN:

ADVICE TO THE

MAIDEN, WIFE AND MOTHER.

BY

GEORGE H. NAPHEYS, A.M., M.D.

MEMBER OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY; CORRESPONDING MEMBER OF THE GYNÆCOLOGICAL SOCIETY OF BOSTON; LATE CHIEF OF MEDICAL CLINIC OF THE JEFFERSON MEDICAL COLLEGE; AUTHOR OF "THE TRANSMISSION OF LIFE," "THE PERVENTION AND CURE OF DISEASE;" "MODERN MEDICAL THERAPEUTICS," "LETTERS FROM EUROPE," ETC.

"Je veux qu'une femme ait des clartes de tout."—MOLIERE.

New Edition.

WITH THE FINAL CORRECTIONS OF THE AUTHOR, AND A BIOGRAPHICAL SKETCH.

PHILADELPHIA:

H. C. WATTS & CO., PUBLISHERS,

26 SOUTH SEVENTH STREET,

1884.

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EDITOR'S PREFACE.

In presenting a third edition of this work to the public, with the final changes and improvements of the author, the publishers have felt it a duty to attach to it a brief sketch of his life, which drew to so early and lamented a termination. The whole has also been submitted to a careful revision, in order that it might be brought down to the latest advances in the department of science of which it treats, and also to include in it the final suggestions of the author.

While Dr. Napheys evidently considered the second edition of the present work as meeting closely the requirements of readers, and therefore left behind him no notes which would alter the general plan, a number of corrections and minor changes have been made in the text, various paragraphs have been materially modified, and the Appendix referring to authorities more or less altered.

The continued popularity of the work has been shown, not only by the steady demand for it, but by the efforts of various authors to write imitations of it, and various publishers to issue mutilated and imperfect editions. Against these the present publishers would warn innocent purchasers. The present is the only edition containing the important additions and corrections made by the author during the latter years of his life; and none other was authorized by him.

In its present form, *The Physical Life of Woman* may justly claim to count among the classics of American literature. Its popularity increases with time, and none of the many similar works which have appeared have approached it in public estimation. It is believed that in the present edition no important scientific fact bearing upon the subject has been omitted, and the most recent developments of hygiene will be found discussed.

1878.

PREFACE

TO THE

SECOND STEREOTYPE EDITION.

THREE years have passed since the author of the present work ventured to lay it before the public, not without unusual anxiety as to the manner in which he had fulfilled a task he knew to be so fruitful of good results if well done. Those years of trial are over, and they have brought a recognition of his labors beyond his most sanguine dreams. Nearly *one hundred and fifty thousand copies* of the work have been sold in that period; it has been separately republished both in Canada and England; it has been honored by a translation into German; the imitations of it which have been written form almost a small library; and, more to the satisfaction of the author than all this, it has received the highest praise both at home and abroad, from both the medical profession and the general learned world.

The present new stereotype edition contains the result of three more years of study and experience, enlightened and aided by very many letters from readers, which served to point out wherein the previous edition

fell short of their wants. The text has been carefully revised, and in large part wholly rewritten; nearly one hundred and fifty pages of selected new matter have been added; and the latest steps of medical science in this direction have been followed.

Of the parts which are quite new, and which from the inquiries of numerous readers will add greatly to the value of the work, are the sections on the disturbances of the monthly function in girls, the care of the child, the management of diseases of children, the diseases incident to pregnancy, childbed, and nursing, etc.

Indeed, in the present edition the author has aimed to omit nothing which can aid Woman in perfoming her full duty to herself and others, so far as that duty lies in the sphere of her Physical Life, whether she is called upon to act as Wife, Mother, Teacher, or Guide. His most ardent desire continues to be that the work will be found a sure and safe monitor amid the difficult duties of Maidenhood and Maternity.

LONDON, ENGLAND, October, 1872.

PREFACE

TO THE

FIRST EDITION.

It seems well to offer, at the outset, a few words explanatory of the nature and object of this book. The author fells that its aim is novel, is daring, and will perhaps subject him to criticism. He therefore make his plea, *pro domo sua*, in advance.

The researches of scientific men within the last few years have brought to light very many facts relating to the physiology of woman, the diseases to which she is subject, and the proper means to prevent those diseases. Such information, if universally possessed, cannot but result in great benefit to the individual and the commonwealth. The difficulty is to express one's self clearly and popularly on topics never referred to in ordinary social intercourse. But as the physician is obliged daily to speak in plain yet decorous language of such matters, the author felt that the difficulty was not unsurmountable.

He is aware that a respectable though diminishing class in the community maintain that nothing which relates exclusively to either sex should become the

subject of popular medical instruction. With every inclination to do this class justice, he fells sure that such an opinion is radically erroneous. Ignorance is no more the mother of purity than she is of religion. The men and women who study and practise medicine are not the worse, but the better, for their knowledge of such matters. So it would be with the community. Had every person a sound understanding of the relations of the sexes, one of the most fertile sources of crime would be removed.

A brief appendix has been added, directed more especially to the professional reader, who may desire to consult some of the original authorities upon whom the author has drawn. And here he would ask from his fellow-members of the medical profession their countenance and assistance in his attempt to distribute sound information of this character among the people. None but physicians can know what sad consequences are constantly occurring from the want of it. * * *

BIOGRAPHICAL SKETCH

OF

GEORGE HENRY NAPHEYS, M.D.

Were man's life measured by his deeds, as the poet suggests, how brief would be the long years of many an octogenarian, and how extended the short span which has been allotted to not a few of the world's famous heroes!

This oft-repeated thought strikes us forcibly in considering the biography of the subject of this sketch. Closing his life at an age when most professional men are but beginning theirs, he had already studied broadly, had traveled widely over two continents, had gained credit and fame by the sword and the pen, and had amassed a fund of erudition and experience which the more lethargic lives of most men fail to approach after twice his length of days. It is eminently appropriate that a record of his busy career should be attached to the works on which his celebrity is chiefly based, and in which he most conspicuously displays that

command of language and happy facility of imparting instruction for which he was so remarkable.

GEORGE HENRY NAPHEYS (pronounced Nā'feez, the ā as in *fate*) was born in the city of Philadelphia, March 5th, 1842. His parents died while he was still at a tender age, and he was placed with some relatives who resided in the city. From early years he was characterized by quick perceptions and a retentive memory. In the Philadelphia High School, from which he received the academic degree of Master of Arts, he was considered the best scholar in his class, a marked distinction in view of the large numbers which attend that institution. Besides acquiring the usual studies of the High School, he gave considerable time to phonography, in which he became so skilled that he could report any ordinary speaker with entire accuracy. This subsequently proved a great advantage to him in his medical career.

After his graduation he repaired to Hartford, Conn., where he was offered and accepted the position of private secretary to a gentleman of prominence in the literary and religious world.

Thus he was engaged when the civil war broke out. With his natural warmth of feeling and strong emotions, he entered the fray among the first, and went out as Lieutenant, and subsequently as Captain, Company F, 10th Connecticut State Volunteers. The regiment was enlisted for nine months, and was dispatched to Louisiana, Genera-

Banks then commanding the Department. It participated in engagements near Baton Rouge and on the Red River, in which Captain Napheys always acquitted himself with bravery and credit.

At the time the regiment was disbanded, an early preference for medical subjects led him to devote a year to the preliminary studies of that profession, but not waiting the full period required for a degree, he was appointed assistant medical officer on the U. S. steamer Mingo, of the South Atlantic Blockading Squadron. On her he passed a number of months, cruising off the coast of the Carolinas and Georgia, and ascended the St. John river.

These active duties prevented him from receiving his degree of Doctor of Medicine until after the close of the war, when, in 1866, his diploma was conferred upon him by the Jefferson Medical College of Philadelphia, one of the most renowned institutions of our country.

After graduation, he opened an office in Philadelphia, and connected himself with the clinics which are held at the College for the purpose of supplying medicine and medical advice to the poor gratuitously, as well as for giving students an opportunity of witnessing various forms of disease. The practical experience he gained in this manner was considerable, and his natural ability soon recommended him to the authorities of the institution, who appointed him Chief of Medical Clinic of the College, a position he held for several years.

One of the advantages of this post was that it brought him into constant communion with many eminent medical men, and rendered him practically acquainted with their treatment of disease. His skill in phonography enabled him to take abundant notes of their lectures, and this led to his early connection with the periodical literature of the profession. Most of the reports he drew up were published in the *Medical and Surgical Reporter*, a weekly journal, devoted to medical science, published in Philadelphia. The series of reports commenced in April, 1866, and continued, with slight interruptions, until June, 1870. They are characterized by a clear and correct style, and a manifestly thorough grasp of the numerous topics treated.

The success which these ephemeral writings obtained turned his thoughts in the direction of authorship. His tastes and associations led him to employ his powers in two directions: first, in preparing for the general public a series of works which would acquaint them with anatomy, physiology, hygiene, sanitary science, nursing, and the management of disease, to the extent that intelligent general readers can and ought to know about these subjects; and secondly, in writing for professional men several treatises on the means of alleviating and curing diseases.

In the prosecution of the first mentioned of these plans, he was early impressed with the utter absence of any treatise on the hygiene of the sexual life in either sex, written in the proper spirit by a scientific man. The field had been

left to quacks or worse, who, to serve their own base ends, scattered inflammatory and often indecent pamphlets over the land; or else, had one or more of the points been handled by reputable writers, it was in such a vague and imperfect manner that the reader gained little benefit from the perusal. While all agreed that a sound treatise on these topics was most desirable, it had been openly averred that it could not be written in a proper style for the general public.

Strong in the conviction that pure motives, literary tact, and the requisite scientific knowledge qualified him to undertake this difficult task, Dr. Napheys prepared, in the early months of 1869, his work on "The Physical Life of Woman." Proceeding with caution, he first submitted the MSS. to some professional friends, and profited by their suggestions. After the work was in type, and before publication, he sent complete copies to a number of gentlemen, eminent as medical teachers, clergymen, educators, and literateurs. Their replies left him in no doubt but that he had succeeded even beyond his anticipations. Almost unanimously the opinions were complimentary in the highest degree, and evidently written after a close examination of the book. As many of these have been printed to accompany the work, in the last and previous editions, it is needless to do more in this connection than to say that they were penned by such judges as Dr. W. A. Hammond, late Surgeon-General U. S. Army; Dr. Harvey L. Byrd, Professor in the Medical Department of Washington University, Md.:

Dr. Edwin M. Snow, Health Officer of the City of Providence, R. I.; Rev. Henry Ward Beecher, Rev. Horace Bushnell, D.D., Rev. George A. Crooke, D.D., D.C.L., and others.

On its appearance, the work was received with enthusiasm by both the medical press and the public. While a few journals and individuals were inclined to condemn it and censure the author, the intelligent and the pure-minded, on all sides, recognized in him the only writer who had yet appeared able to treat these delicate subjects with the dignity of science and the straightforwardness necessary for popular instruction.

Satisfied that he had chosen the proper exercise for his talents, he composed and placed in the hands of his publisher, the following year, his not less extraordinary work, "The Transmission of Life," a treatise addressed to the male, as his previous one had been to the female sex. It was dedicated to the late Rev. John Todd, so well known for his interest in young men, and his "Student's Manual" and other works addressed to them. He accepted the dedication and addressed the author a letter, in which occurs the following high compliment to his work: "I am surprised at the extent and accuracy of your reading; the judiciousness of your positions and results; the clear, unequivocal, yet delicate and appropriate language used; and the amount of valuable information conveyed." Similar expressions poured in from many other distinguished critics, as, for in-

stance, Dr. Noah Porter, President of Yale College; the Rev. Henry Clay Trumbull, the Rev. Abner Jackson, President of Trinity College, Hartford, etc.

In the same year (1870) he brought out the first edition of his "Modern Therapeutics," a technical work, addressed to physicians. This was enlarged in successive editions, until in its present form, as continued by other hands in its latest editions, it comprises two parts of 600 pages each. Although the author claimed little other originality in this work than the selection and arrangement of known facts, yet in these respects he displayed the strongly practical and original turn of his mind. As a student of the art of Therapeutics in large hospitals, clinics, and dispensaries, he had convinced himself that it is not by experiments on lower animals, nor yet on the human body in health, that the physician can attain the glorious power of alleviating pain and curing disease; it is only through the daily combat with sickness, by the bedside and in the consulting room. Chemistry and physiology, he believed, could teach but little in this branch; observation and experience everything. Hence, in his work on Therapeutics he announced himself as "aiming at a systematic analysis of all current and approved means of combating disease," selecting his formulæ and therapeutical directions from the most eminent living physicians of all nations.

This work was most favorably received by medical men; and, edited and revised by competent hands, continues to be

regarded as one of the most valuable works in American medical literature. The unanimous opinion of the leading medical journals, as well as of its numerous purchasers, have testified to its real and great worth to the practitioner of medicine.

Having thus established a wide, popular and professional reputation, one which would have guaranteed him a lucrative practice, it would have tempted another, no doubt, to make the most of this opportunity, so rarely granted a young physician. Not so was it with Dr. Napheys. No sooner had the three works mentioned been completed than he sailed for Europe, in order to familiarize himself with the famed schools of learning of the Old World and its rich stores of material for culture. The summer was that of the Franco-German war; and spending most of it in Paris, he was witness of several of the most exciting scenes which attended the dethronement of the Emperor. These he would describe afterwards with a vividness and power of language rarely excelled.

The excitement of the period did not, however, withdraw his attention from the studies he had in view. These were partially indicated in a series of letters he contributed to various periodicals during his absence. While these letters were principally of a scientific character, it is noteworthy how the relations of medicine to the welfare of man always occupied his attention. Thus we find, in one sent from England, June, 1870, a description of the Liverpool Medi-

cal Missionary Society, a charity which combines religious instruction with medical advice; and again, he comments on the popular instruction in hygiene which was supplied at that period to the English workingmen by a committee of competent physicians, organized for that purpose. It was the author's purpose to collect and expand these letters into a volume, but the project was not carried out.

The siege of Paris, which city he left in one of the last trains before the blockade commenced, and the prolongation of the war, induced him to return home. In the United States he found offers from several publishers awaiting him, which would more than occupy him for a full year. There was a new edition of his "Therapeutics" demanded, and a revision of both "The Physical Life of Woman" and "The Transmission of Life." A New England firm urgently pressed him to superintend the production of several hygienic works, and secured him as literary adviser to their house. He assumed the editorship of the "Half-Yearly Compendium of Medical Science," and also of a "Physician's Annual," besides undertaking a number of articles for the periodical press, both scientific and popular.

To this active literary life he devoted the year 1871; but at its close felt more strongly than ever that he must give himself several years of studious quiet, in order to accomplish his best. Refusing, therefore, any further engagements, he sailed for Europe again, late in 1871, and did not return this time until the spring of 1875. In this

period, of more than three years, he visited almost all the principal cities of Europe, and enjoyed the friendship of many eminent men at London, St. Petersburg, Vienna, and Paris. Reading, visiting hospitals, and attending clinics, he accumulated a mass of material which he designed to work up into future literary enterprises.

With these collected stores he returned to the United States early in 1875, and set to work with his wonted energy. A new and much enlarged edition of the "Therapeutics" was sent to press; a "Handbook of Popular Medicine," designed to give, in simple language, the domestic treatment of disease, the rules for nursing the sick, selected receipts for diet and medicinal purposes, and the outlines of anatomy and physiology, was put in the hands of a publisher; a Synopsis of Pharmacy and Materia Medica, a work of enormous labor, was well under way; and other literary projects were actively planned; when, suddenly, the summons came which, in an instant, with the shears of fate, slit the strand of this activity. The rest of the story may be told in the words of the biographer appointed by the Medical Society of the County of Philadelphia to prepare a memoir of his life:—

"While earnestly laboring to prepare for the press his literary collections, he suffered a severe blow by the sudden death of a person to whom he was deeply attached. Overwork and this emotional shock produced a result likely enough to occur in one of his ardent temperament. One

afternoon, while engaged in writing, he fell, unconscious, from his chair, and for several days lay in a very critical condition. On recovering his powers, it was evident his brain had suffered a serious lesion. The old energy and love of labor had completely gone; even the capacity for work seemed absent. Marked melancholy followed, characterized before long by avoidance of friends and the loss of a desire of life. This occurred with increasing force until it led to his death, on July 1, 1876, through some toxic agent, the nature of which was not ascertained.

"Thus early, and thus sadly, terminated a career of unusual brilliancy and promise.

"It is probable that much that he has written will be read with pleasure and instruction by future generations; and the memory of his genial disposition, his entertaining conversation, and earnest sense of professional honor, will long be cherished by those of his contemporaries who enjoyed his friendship."—*Transactions of the Medical Society of the State of Pennsylvania*, vol. xi, p. 720.

Various tributes were paid to his memory by the societies with which he was connected, and by the scientific journals to which he had been a contributor. One of these, after narrating some of the circumstances attending his decease, spoke as follows:—

"Thus did our unfortunate associate close his short but brilliant career. The emotions, the tender sentiments he has described with such a magical pen, he felt himself with

an unmatched keenness. They mastered his whole frame with an intensity surpassing all romance. His descriptions of the passions, descriptions which have been the wonder of thousands, such is their fire and temper, were not rhetorical studies, but the ebullition of a soul sensitive to their lightest breath, and not shunning their wildest tempests.

"The genius which dictated the lines he has left us is not to be judged by the conventionalities which suit the cold temperaments of ordinary men; there is a strong vein of egotism in most devotion; but here was one who felt, 'all is lost, when love is lost.'"

This extract well sets forth the extraordinary depth of his sentiments, and the fervor of his feelings. It may be added that these mental traits were not generally ascribed to him by casual or ordinary associates. He was, in manners and bearing, evidently not one who sought friendships or displayed to the general gaze the current of his thoughts. Consequently, of intimates he had but few, and was considered by those whose intercourse with him was superficial, to be much more of an intellectual than of an emotional type of character.

This impression was doubtless increased by the strongly practical turn of his mind, which is conspicuous in all his works. He was the reverse of a dreamer and had little patience with theorists. In his professional study he always aimed at bringing into the strongest light the utilitarian aspect of medicine, its ameliorating power on humanity, its

real efficacy in preserving or restoring health and limiting human misery. On this his theory of therapeutics was based, and, inspired by the same opinions, he was one of the most earnest advocates of the day of popularizing medical science in all its branches among the masses. In this effort he was at times severely criticised by that class of physicians —and they are by no means extinct—who think that medicine should be wrapped in mystery, and that the people should be kept in ignorance of themselves and of their own physical frailties, to the utmost possible extent. With these learned obscurantists Dr. Napheys had no patience, and naturally found but slight favor. Fortunately, they were in the decided minority, and, we are happy to add, even that minority is daily decreasing.

Of the various learned societies to which he was attached may be mentioned the Philadelphia County Medical Society, the Franklin Institute of Philadelphia, and the Gynecological Society of Boston. His election as Corresponding Member to the latter body (which is an association of scientific men who make an especial study of the hygiene and diseases of women) took place shortly after the first publication of the *Physical Life of Woman*, and was meant as a direct tribute of respect to him as the author of that work, thus obtaining for it the testimony of the highest body in that specialty then existing in our land.

The general plan on which Dr. Napheys prepared his sanitary writings was one eminently calculated to reconcile

those who were most opposed to instructing the general public in such branches. While he confidently believed that vastly more harm than good is done by a prudish concealment of the physiology of sex and its relations to health, he also clearly recognized that such instruction should be imparted at the proper age and under certain limitations; while the general facts common to the species cannot be taught too generally, or made too familiar. Hence, he projected three books, one to be placed in the hands of young women, a second for youths, and a third for a general household book of reading and reference on medicine and hygiene. These three he completed in "The Physical Life of Woman," "The Transmission of Life," and the "Handbook of Popular Medicine."

This plan, he believed, met all the objections to popular medical instruction, at least all well-grounded objections, while at the same time it did away with any necessity for concealing truths important to be known, for fear they should come to the knowledge of those for whom they were not designed, and on whose minds they might have a disturbing tendency.

There can be no doubt but that both the plan and its execution were successful. The many letters he received, filled with thanks from private parties who had gained inestimable knowledge from these works, made rich compensation for the occasional severe strictures he received from

those wedded to ancient ways, and who often condemned without even reading his works.

The intelligent reading public, on whom, after all, the writer must depend for a verdict on his works, were unanimous in his favor. They bought them in quantities, and the writer of his life in the *Transactions of the Pennsylvania State Medical Society*, above quoted, who wrote in 1877, estimates that by that time over *a quarter of a million* copies had been printed and sold. Translations were made into the German, and several editions pirated and printed in Canada and England. In fact, the works may now be considered to rank as classics in the language, and many years must go by before another such series can be written, on topics of this nature, with equal delicacy of touch and accuracy of knowledge.

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PHYSICAL LIFE OF WOMAN.

KNOWLEDGE IS SAFETY.

'KNOWLEDGE is power,' said the philosopher. The maxim is true; but here is a greater truth: 'Knowledge is safety,'—safety amid the physical ills that beset us,—safety amid the moral pitfalls that environ us.

Filled with this thought, we write this book. It is the Revelation of Science to Woman. It tells her, in language which aims at nothing but simplicity, the results which the study of her nature, as distinct from that of man, has attained. We may call it her physical biography.

It is high time that such a book were written. The most absorbing question of the day is the 'Woman Question.' The social problems of chiefest interest concern her. And nowhere are those problems more zealously studied than in America, which has thrown aside the trammels of tradition, and is training its free muscles with intent to grapple the untried possibilities of social life. Who can guide us in these experiments? What master, speaking as one having authority, can advise us? There is such a guide, such a master. The laws of woman's physical life shape her destiny and reveal her future. Within

these laws all things are possible; beyond them, nothing is of avail.

Especially should woman herself understand her own nature. How many women are there, with health, beauty, merriment, ay, morality too, all gone lost for ever, through ignorance of themselves! What spurious delicacy is this which would hide from woman that which beyond all else it behooves her to know? We repudiate it; and in plain, but decorous language,—truth is always decorous,—we purpose to divulge those secrets hidden hitherto under the technical jargon of science.

THE DISTINCTION OF THE SEXES.

The distinction of the sexes belongs neither to the highest nor to the lowest forms of existence. Animals and vegetables of the humblest character have no sex. So it is with spirits. Revelation implies that beyond this life sexual characteristics cease. On one occasion the Sadducees put this question to Christ: There was a woman who lawfully had seven husbands, one after the other; now, at the resurrection, which of these shall be her husband? or shall they all have her to wife? He replied that hereafter there shall be neither marrying nor giving in marriage, but that all shall be 'as the angels which are in heaven.' Sexuality implies reproduction, and that is something we do not associate with spiritual life.

It further implies imperfection, which is equally far from our hopes of happiness beyond the grave. The polyp, which reproduces by a division of itself, is in one sense more complete than we are. The

man is in some respects inferior to the woman ; the woman in others is subordinate to man. A happy marriage, a perfect union, they twain one flesh, is the type of the independent, completed being. Without the other, either is defective. 'Marriage,' said Napoleon, 'is strictly indispensable to happiness.'

There is, in fact, a less difference between the sexes than is generally believed. They are but slight variations from one original plan. Anatomists maintain, with plausible arguments, that there is no part or organ in the one sex but has an analogous part or organ in the other, similar in structure, similar in position. Just as the right side resembles the left, so does man resemble woman.

Let us see what differences there really are :

The frame of woman is shorter and slighter. In the United States the men average five feet eight inches in height, and one hundred and forty-five pounds in weight ; the women, five feet two and a half inches in height, and one hundred and twenty-five pounds in weight. Man has broad shoulders and narrow hips ; woman has narrow shoulders and broad hips. Her skull is formed of thinner bones, and is in shape more like that of a child. Its capacity, in proportion to her height, is very little less than in man,—about one-fiftieth, it is said,—which, so far as brain-power is concerned, may readily be made up by its finer texture. Her shoulders are set farther back than in the other sex, giving her greater breadth of chest in front. This is brought about by the increased length of her collar-bone ; and this is the reason why she can never throw a

ball or stone with the accuracy of a man. Graceful in other exercises, here she is awkward.

Her contour is more rounded, her neck is longer, her skin smoother, her voice softer, her hair less generally distributed over the body, but stronger in growth than in man. She breathes with the muscles of her chest—he with those of his abdomen. He has greater muscular force—she more power of endurance. Beyond all else she has the attributes of maternity,—she is provided with organs to nourish and protect the child before and after birth.

PERSONS OF BOTH SEXES AND OF NEITHER SEX.

Nature is very sedulous in maintaining these differences. It is the rarest thing in the world to find a human being of doubtful sex. Many a physician disbelieves that there ever has been a person of both sexes—a true hermaphrodite. They are very scarce, but they do exist. There is one now living in Germany. It bears a female name, Catherine Hohmann. She was baptised and brought up a female; but Catherine is as much man as woman. The learned professor of anatomy, Rokitansky, of Vienna, asserts most positively that this is a real hermaphrodite. Her history is sad. Born in humble circumstances, when of marriageable age she loved a man, who wished her to emigrate with him to America. But when she disclosed to him her deformity, he broke off the engagement and deserted her. Then her affection became fixed on a young girl; but how could she make her suit to one apparently of her own sex? With passions

that prompt her to seek both sexes, she belongs to neither. 'What shall I do here on earth?' she exclaimed, in tears, to a man of science who recently visited her. 'What am I? In my life an object of scientific experiment, and after my death an anatomical curiosity.'

There are also persons—very few indeed—who have no sex at all. They are without organs and without passions. Such creatures seem to have been formed merely to show us that this much-talked-of difference of sex is, after all, nothing inherent in the constitution of things, and that individuals may be born, live and thrive, of both sexes, or of neither.

THE SPHERE OF WOMAN.

Our province lies within the physical sphere of woman. But we will here allow ourselves a momentary digression. It will be seen that while these differences are not radical, yet they are peculiarly permanent. They hint to us the mental and intellectual character of woman. What opinion should we hold on this much-vexed question?

To this effect: The mental faculties of man and woman are unlike, but not unequal. Any argument to the contrary, drawn from the somewhat less weight of the brain of woman, is met by the fact that the most able men are often undersized, with small heads. The subordinate place which woman occupies in most states, arises partly from the fact that the part she plays in reproduction prevents her from devoting her whole time and energies to the acquisition of power, and partly

from the fact that those faculties in which she is superior to man have been obscured and oppressed by the animal vigor and selfishness of the male. As civilisation advances, the natural rights of woman will be more and more freely conceded, until the sexes become absolutely equal before the law; and, finally, her superiority in many respects will be granted, and she will reap the benefits of all the advantages it brings, without desiring to encroach on those avocations for which masculine energy and strength are imperatively needed.

The most peculiar features of woman's life are hers for a limited period only. Man is man for a longer time than woman is woman. With him it is a life-time matter; with her it is but for a score of years or so. Her child-bearing period is less than half her life. Within this time she passes through all the phases of that experience which is peculiarly her own.

And these phases, what are they? Nature herself defines them. They are three in number,—the Maiden, the Wife, and the Mother. In one and then another of this triad, her life passes. Each has its own duties and dangers; each demands its own precautions; each must be studied by itself.

Let us at once commence this important study, and proceed in the order of time.

THE MAIDEN.

PUBERTY.

AT a certain period in the life of the female, she ceases to be a girl, and becomes a *woman*. Hitherto she has felt no distinction between herself and the boys, her playmates. But now a crisis takes place, which is for ever after to hedge her round with a mysterious, invisible, but most real barrier from all *man*kind.

This period is called *the age of puberty*. Its sign is a flow of blood recurring every month; its meaning, that the female has entered upon that portion of her life whose peculiar obligations are to the whole race—no longer to herself alone. The second part of her twofold nature is opened. Why is it that on her, the weaker sex, this extra burden is laid? Why this weakness, these pains, this recurring loss of vital fluid?

Perhaps, as has been observed, it is a wise provision that she is thus reminded of her lowly duty, lest man should make her the sole object of his worship, or lest the pride of beauty should obscure the sense of shame. But this question concerns rather the moralist than the physician, and we cease asking *why* it is, and shall only inquire *what* it is.

To this science returns a clear reply. In the anatomy of woman there are two small bodies, in shape and size like large almonds, called the ovaries. They lie one on each side of the womb, and are connected with it by tubes about four inches in length. These bodies are solid, but contain a great number of diminutive vesicles, which, by some mysterious law of nature, mature one at a time, every thirty days, for thirty years of woman's life. When mature, the vesicle separates from the ovary, traverses the tube into the womb, and is thence expelled and lost, or becomes, by contact with the other sex, the germ of a living being. This process is accompanied by a disturbance of the whole system. Wandering pains are felt; a sense of languor steals over the mind; the blood rushes with increased violence through the vessels, and more or less of it escapes from the veins, causing that change which we term *menstruation.*

The ancients had a tradition that in the beginning of things the world was made from an egg; the naturalists of past generations had this maxim: Everything living comes from an egg; and science to-day says the same. For this vesicle we have mentioned is in fact an *egg*, similar in structure to those which birds, fish, and turtles deposit. The only differences are, that the one is developed out of the body, the other within; the one has a shell, the other has none.

Therefore physiologists give this definition: Menstruation is ovulation,—it is the laying of an egg.

WHAT IS THE AGE OF PUBERTY?

This has been a matter of careful study by physicians. They have collected great numbers of observations, and have reached this conclusion: In the middle portion of the temperate zone, the average age when the first period appears in healthy girls is fourteen years and six months. If it occurs more than six months later or earlier than this, then it is likely something is wrong, or, at least, the case is exceptional.

Exceptional cases, where this average is widely departed from in apparently perfect health, are rare. But they do occur. We have known instances where the solicitude of parents has been excited by the long delay of this constitutional change, and others in which it has taken place at an almost tender age, without causing any perceptible injury to the general health.

There is an instance recorded, on good authority, where a French child but three years old underwent all the physical changes incident to puberty, and grew to be a healthy woman. But what children can surpass the American in precocity? This French child-woman is quite left in the shade by one described in a recent number of a western medical journal, who *from her birth* had regular monthly changes, and the full physical development which marks the perfect woman!

Thus, sometimes, a wide deviation from the average age we have stated occurs, without having any serious meaning. Yet at no time is such a deviation to be neglected. In nine out of ten instances

it is owing to some fault in the constitution, the health, or formation, which should be ascertained and corrected. Otherwise years of broken health and mental misery may be the sad results. Mothers, teachers, it is with you this responsibility rests. The thousands of wretched wives, who owe their wretchedness to a neglect of proper attention at this turning-point of their lives, warn you how serious is this responsibility.

The foundation of old age, says a distinguished author, is laid in childhood; but the health of middle-life depends upon puberty. Never was there a truer maxim. The two years which change the girl to the woman often seal for ever the happiness or the hopeless misery of her whole life. They decide whether she is to become a healthy, helpful, cheerful wife and mother, or a languid, complaining invalid, to whom marriage is a curse, children an affliction, and life itself a burden.

We reiterate our warning: Mothers, teachers, you to whom children are confided at this crisis of their lives, look well to it that you appreciate, understand, and observe the duties you have assumed. Let no false modesty prevent you from learning and enforcing those precautions, so necessary at this period of life.

WHAT HASTENS AND WHAT RETARDS PUBERTY?

As a rule, we find that those who develope early, fade early. A short childhood portends a premature old age. It often foreshadows, also, a feeble middle-life.

Having ascertained, therefore, what is the average

age at which puberty takes place with us, let us see what conditions anticipate or retard this age.

The most important is *climate.*

In hot climates, man, like the vegetation, has a surprising rapidity of growth. Marriages are usual at twelve or fourteen years of age. Puberty comes to both sexes as early as at ten and eleven years. We even read in the life of Mohammed, that one of his wives, when but ten years of age, bore him a son. Let another dozen years pass, and these blooming maidens have been metamorphosed into wrinkled, faded old women. The beauty of their precocious youth has withered almost literally like a flower which is plucked.

Very different is it in the cold and barren regions of the far north. There man, once more partaking of the nature of his surroundings, yields as slowly to the impulses of his passions as does the ice-bound earth to the slanting rays of the summer sun. Maturity, so quick to come, so swift to leave in the torrid heats, arrives, chilled by the long winters, to the girls of Lapland, Norway, and Siberia, only when they are eighteen and nineteen years of age. But, in return for this, they retain their vigor and good looks to a green old age.

Between these extremes, including as they do the whole second decade of existence, this important change takes place normally in different latitudes. We have said that in the middle temperate zone the proper age is fourteen years and six months. Let us now see what conditions lead to deviations from this age in our climate.

First on the list is that sacred fire handed down

to us from our ancestors, which we call, in our material language, the *constitution.*

The females of certain races, certain families, it is often noticed, mature earlier than their neighbours. Jewesses, for example, are always precocious, earlier by one or two years. So are colored girls, and those of creole lineage. We can guess the reasons here. No doubt these children still retain in their blood the tropic fire which, at comparatively recent periods, their forefathers felt under the vertical rays of the torrid zone.

Nor is this all. It is well ascertained, from numerous observations, that brunettes develope sooner than their blonde sisters; that those who will grow to be large women are slower than those whose stature will be small; that the dark-haired and black-eyed are more precocious in this respect than the light-haired and blue-eyed; that the fat, sluggish girl is more tardy than the slender, active one; that, in general, what is known as the nervo-bilious temperament is ever ahead of that called the lymphatic or phlegmatic.

It is a familiar fact, that it is not a good sign to see this change before the usual average time. It betokens a weakly, excitable, diminutive frame. Hard labor, vigorous, regular muscular exertion—prime health, in other words—never tends to anticipate this epoch, but rather to retard it.

With this warning fresh in our ears, let us now rehearse what causes constantly incline unduly to hasten puberty, and thus to forestall wise Nature in her plans for health and beauty. They are of two kinds,—physical and mental.

Idleness of body, highly-seasoned food, stimulating beverages, such as beer, wine, liqueurs, and, in a less degree, coffee and tea, irregular habits of sleep,—these are the physical causes of premature development. But the mental causes are still more potent.

Whatever *stimulates the emotions* leads to an unnaturally early sexual life. Late hours, children's parties, sensational novels, 'flashy' papers, love stories, the drama, the ball-room, talk of beaux, love, and marriage,—that atmosphere of riper years which is so often and so injudiciously thrown around childhood,—all hasten the event which transforms the girl into the woman. A particular emphasis has been laid by some physicians on the power of music to awaken the dormant susceptibilities to passion, and on this account its too general or earnest cultivation by children has been objected to. Educators would do well to bear this caution in mind.

How powerfully these causes work is evident when we compare the average age of puberty in large cities and in country districts. The females in the former mature from six to eight months sooner than those in the latter. This is unquestionably owing to their mode of life,—physically indolent, mentally over-stimulated The result, too, is seen with painful plainness in comparing the sturdy, well-preserved farm-wife of thirty, with the languid, pale, faded city lady of the same age.

THE CHANGES IT WORKS.

Two short years change the awkward and angular girl of fourteen into the trim and graceful maiden of sweet sixteen. Wonderful metamorphosis! The magic wand of the fairy has touched her, and she comes forth a new being, a vision of beauty to bewitch the world.

Let us analyze this change.

The earliest sign of approaching puberty is a deposit of fat in the loose cellular tissue under the skin. This gives roundness to the form, and grace to the movements. According to a distinguished naturalist (Buffon), it is first observable by a slight swelling of the groins. Thence it extends over the whole body. The breasts especially receive additions, and develope to form the perfect bust.

Parts of the body previously free from hair become covered with a soft growth, and that which covers the head acquires more vigor and gloss, usually becoming one or two shades darker. The eyes brighten, and acquire unwonted significance. These windows of the soul betray to the close observer the novel emotions which are arising in the mind within.

The voice, too, shares in the transformation. The piping, slender articulation of the child gives way to the rich, melodious, soft voice of woman—the sweetest music man ever hears. To the student of humanity, to the observant physician, nothing is more symbolical of the whole nature than the voice. Would you witness a proof of its power? Watch

how a person born blind unerringly discriminates the character of those he meets by this alone.

Beyond all external modifications, we find others, which indicate how profound is the alteration now taking place. The internal organs of the body assume new functions and new powers. The taste for food changes, hinting that the system has demands hitherto unknown. Those organs we have adverted to, called the ovaries, increase in size, as also does the uterus. The very framework of the structure does not escape. The bones increase in weight, and those around the hips expand, and give the female her distinctive form, upon the perfection of which her life and that of her children depend.

MENTAL CHANGES.

Such are the changes which strike the eye. But there are others which are not less significant, and which demand far more urgently our watchful heed. New thoughts, strange desires, are invading the soul. A novel relation is assumed to the world. It is vague, misunderstood, but disturbing all the same.

The once light-hearted girl inclines to reveries; she seeks solitude; her mother surprises her in causeless tears; her teacher discovers an unwonted inattention to her studies, a less retentive memory, a disinclination to mental labor; her father misses her accustomed playfulness; he, perhaps, is annoyed by her listlessness and inertia. What does it all mean? What is the matter with the girl?

Mother, teacher, father, it is for you to know the answers to these questions. You have guarded this

girl through years of helpless infancy and thoughtless childhood At the peril of her life, and of what is of more value than life, do not now relax your vigilance. Every day the reaper Death reaps with his keen sickle the flowers of our land. The mothers weep, indeed; but little do they realize that it is because they have neglected to cherish them as was their duty, that the Lord of Paradise has taken them back unto Himself.

THE COMPLETION OF PUBERTY.

The symptoms increase until at length the system has acquired the necessary strength, and furnished itself with reserve forces enough to complete its transformation. Then the monthly flow commences.

In thoroughly healthy girls it continues to recur at regular intervals, from twenty-five to thirty days apart. This is true of about three out of four. In others, a long interval, sometimes six months, occurs between the first and second sickness. If the general health be not *in the least* impaired, this need cause no anxiety. Irregularities are found in the first year or two, which often right themselves afterwards. But whenever they are associated with the *slightest* signs of mental or bodily disorder, they demand instant and intelligent attention.

It used to be supposed that the periods of the monthly sickness were in some way connected with the phases of the moon. So general is this belief even yet in France, that a learned Academician not long since thought it worth while carefully to compare over four thousand observations, to see whether

they did bear any relations to the lunar phases. It is hardly worth while to add that he found none.

We have known perfectly healthy young women who were ill every sixteen days, and others in whom a period of thirty-five or thirty-six days would elapse. The reasons of such differences are not clear. Some inherited peculiarity of constitution is doubtless at work. Climate is of primary importance. Travellers in Lapland, and other countries in the far north, say that the women there are not regulated more frequently than three or four times a year. Hard labor and a phlegmatic temperament usually prolong the interval between the periodical illnesses.

An equal diversity prevails in reference to the *length of time* the discharge continues. The average of a large number of cases observed in healthy women, between the ages of fifteen and thirty-five, is four days and a fraction. In a more general way, we may say from two to six days is the proper duration Should it diverge widely from this, then it is likely some mischief is at work.

In relation to the *amount* of the discharge, every woman is a law unto herself. Usually, it is four or five ounces in all. Habits of life are apt to modify it materially. Here, again, those exposed to prolonged cold and inured to severe labor escape more easily than their sisters petted in the lap of luxury. Delicate, feeble, nervous women—those, in other words, who can least afford the loss of blood—are precisely those who lose the most. Nature, who is no tender mother, but a stern step-mother, thus punishes them for disregarding her laws.

Soft couches, indolent ease, highly spiced food; warm rooms, weak muscles,—these are the infractions of her rules which she revenges with vigorous, ay, merciless severity.

It is well known, too, that excitement of the emotions, whether of anger, joy, grief, hatred, or love increases the discharge. Even the vulgar are aware of this, and, misinterpreting it as half-knowledge always does, suppose it a sign of stronger animal passions. It bears no such meaning. But the fact reads us a lesson how important it is to cultivate a placid mind, free from strong desire or fear, and to hold all our emotions in the firm leash of reason.

Physicians attach great importance to the *character* of the discharge. It should be thin, watery, dark-coloured, and never clot. If it clots, it is an indication that something is wrong.

THE DANGERS OF PUBERTY.

We have shown that there are constantly individual deviations, quite consistent with health, from any given standard. They only become significant of disease when they depart decidedly from the average, either in the frequency of the illness, its duration, the amount of the discharge, or the character. More or less pain, more or less prostration and general disturbances at these epochs, are universal and inevitable. They are part of the sentence which at the outset He pronounced upon the woman, when He said unto her, 'I will greatly multiply thy sorrow and thy conception.' Yet with merciful kindness He has provided means by which

the pain may be greatly lessened, and the sorrow avoided; and that we may learn and observe these means, their neglect often increases a hundred-fold the natural suffering.

At this critical period, the seeds of hereditary and constitutional diseases manifest themselves. They draw fresh malignancy from the new activity of the system. The first symptoms of tubercular consumption, of scrofula, of obstinate and disfiguring skin diseases, of hereditary insanity, of congenita epilepsy, of a hundred terrible maladies, which from birth have lurked in the child, biding the opportunity of attack, suddenly spring from their lairs, and hurry her to the grave or the madhouse. If we ask why so many fair girls of eighteen or twenty are followed by weeping friends to an early tomb, the answer is, chiefly from diseases which had their origin at the period of puberty.

It is impossible for us here to rehearse all the minute symptoms, each almost trifling in itself, which warn the practised physician of the approach of one of these fearful foes in time to allow him to make a defence. We can do little more than iterate the warning, that whenever, at this momentous epoch, any disquieting change appears, be it physical or mental, let not a day be lost in summoning *skilled, competent* medical advice.

There is, however, a train of symptoms so frequent, so insidious, so fruitful with agony of mind and body, that we shall mention them particularly. They illustrate, at once, how all-important is close observation, and how significant to the wise physician are trifles seemingly light as air.

If you notice a girl of fourteen or sixteen, who, in walking, always gives one arm in preference to the other to her companion; if, in sleeping, she mostly lies on the same side; if, in sitting, she is apt to prefer a chair with a low back, and throws one arm over its back; if you perceive that she always sits with one foot a little in advance of the other; if she, on inquiry, confesses to slight, wandering pains in one side of her chest,—do not chide her for awkwardness. These are ominous portents. They mean *spinal disease*, than which a more fearful malady is hardly known to medicine.

Not less stealthy is the approach of disease of the hip-joint, of white swelling of the knee, of consumption,—all curable if taken in hand at the very first, all well-nigh hopeless when they have once unmasked their real features.

Apart from these general dangers, to which those of thoroughly sound constitutions are not exposed, there are disorders called functional, to which all are subject.

GREEN SICKNESS.

When we speak of the 'green sickness,' we mention perhaps the most common of all, and one of which every mother has heard. Doctors call it *chlorosis*, which also means *greenness*; for one of its most common and peculiar symptoms is a pale complexion with a greenish tinge.

It never occurs except at or near the age of puberty, and was long supposed to be merely an impoverishment of the blood. Now, however, we have learned that it is a disease of the nervous sys-

tem, and one very often confounded by physicians with other complaints.

Its attack is insidious. A distaste for exertion and society, a fitful appetite, low spirits,—these are all the symptoms noticed at first. Then, one by one, come palpitation of the heart, an unhealthy complexion, irregularity, dyspepsia, depraved tastes, —such as a desire to eat slate-pencil dust, chalk, or clay,—vague pains in body and limbs, a bad temper; until the girl, after several months, is a peevish, wretched, troublesome invalid.

Then, if a physician is called in, and gives her iron, and tells her nothing is the matter, or is himself alarmed, and imagines she has heart disease or consumption, it is a chance if she does not rapidly sink, out of mere fright and over-much dosing, into some fatal complaint. Let it be well understood that chlorosis, though often obstinate and obscure, is always curable if properly and promptly treated. The remedies must be addressed to the nervous system, and can be administered with intelligence only by a competent medical adviser. It can be prevented by a hygienic mode of life, and, as its most common causes are anxiety, home-sickness, want of exercise, or overwork at school, nothing is so salutary in its early stages as a change of air and scene, cheerful company, a tour to the mountains or some watering-place, and regular exercise.

Many young women suffer considerable pain during their monthly illness. This may arise from many different causes, such as, congestion, inflammation, malformation, or a wrong position of the

parts, or over-sensitive nerves. They can only be successfully treated when the cause is known; and they may rest assured that this suffering, in nearly every case, can be removed.

Sometimes a girl grows to the age of eighteen or twenty without having her periodical changes. We have already said that this is not unusual in some climates and in some families; so, as long as the general health is good and the spirits cheerful,—always an important point,—it need cause no anxiety. But if the health grow poor, and especially if there be pains and weakness recurring monthly without discharge, then something is wrong, and the doctor should be consulted.

HYSTERICS.

There is a disease of the nerves to which girls about the age of puberty are very subject, particularly in the higher circles of society, where their emotions are over-educated and their organization delicate. It is called hysteria, and more commonly *hysterics*. Frequently it deceives both doctor and friends, and is supposed to be some dangerous complaint. Often it puts on the symptoms of epilepsy, or heart disease, or consumption. We have witnessed the most frightful convulsions in girls of fourteen or fifteen, which were brought on by this complaint. Sometimes it injures the mind; and it should always receive prompt and efficient attention, as it is always curable.

This disease is apt to produce a similar affection in other girls of the same age who see the attacks. For this reason, hysterical girls should not be sent

to large schools, but cured at home. Often a strong mental impression restores them. The anecdote is told of a celebrated surgeon (Boerhaave) who was called to a female seminary where there was a number of hysterical girls. He summoned them together, heated a number of iron instruments before their eyes, and told them that the first one who had a fit should be cauterized down the spine. They all recovered immediately.

SECRET BAD HABITS.

We now approach a part of our subject which we would gladly omit, did not constant experience admonish us of our duty to speak of it in no uncertain tone. We refer to the disastrous consequences on soul and body to which young girls expose themselves by exciting and indulging morbid passions. Years ago, Miss Catherine E. Beecher sounded a note of warning to the mothers of America on this secret vice, which leads their daughters to the grave, the madhouse, or, worse yet, the brothel.

Gladly would we believe that her timely admonition had done away with the necessity for its repetition But though we believe such a habit is more rare than many physicians suppose, it certainly exists to a degree that demands attention. Surgeons have recently been forced to devise painful operations to hinder young girls from thus ruining themselves; and we must confess that, in its worst form, it is absolutely incurable.

The results of the constant nervous excitement which this habit produces are bodily weakness, loss of memory, low spirits, distressing nervousnes, as

capricious appetite, dislike of company and of study, and finally, paralysis, imbecility, or insanity. Let it not be supposed that there are many who suffer thus severely; but, on the other hand, let it be clearly understood that any indulgence whatever in these evil courses is attended with bad effects, especially because they create impure desires and thoughts, which will prepare the girl to be a willing victim to the arts of profligacy. There is no more solemn duty resting on those who have the charge of young females than to protect them against this vice.

But, it is exclaimed, is it not dangerous to tell them anything about it? Such a course is unnecessary. Teach them that any handling of the parts, any indecent language, any impure thought, is degrading and hurtful. See that the servants, nurses, and companions with whom they associate are not debased; and recommend scrupulous cleanliness.

If the habit is discovered, do not scold nor whip the child. It is *often* a result of disease, and induced by a disagreeable local itching. Sometimes this is connected with a disorder of the womb, and very frequently with worms in the bowels. Let the case be submitted to a judicious, skilful medical adviser, and the girl will yet be saved. But do not shut your eyes, and refuse to see this fact when it exists. Mothers are too often unwilling to entertain for a moment the thought that their daughters are addicted to such a vice, when it is only too plain to the physician.

THE HYGIENE OF PUBERTY.

Concerning the maladies of puberty, we may broadly say, that if we are obliged to have recourse to medicine, it is because we have neglected hygiene. That the period requires assiduous care, we grant; but given that care, drugs will be needless.

In a general way, we have already emphasized the danger of indolence and the benefits of exercise or labor; the perils of exciting the emotions, and the advantages of a placid disposition; the impropriety of premature development, and the wisdom of simplicity and moderation. This is an old story —a thrice-told tale. Let us go more into minutiæ.

One of the most frequent causes of disease, about the age of puberty, is *starvation.* Many a girl is starved to death. Food is given her, but not of the right quality, or in insufficient quantity, or at improper hours. The system is not nourished, and, becoming feeble, it is laid open to the attacks of disease, and to no form of disease more readily than to consumption.

To correct this, let the food be varied, simply prepared, and abundant. Good fresh milk should be used daily, while tea and coffee should be withheld Fat meats and vegetable oils, generally disliked by girls at this age, are exactly what they need; and were they partaken of more freely, there would be less inquiry at the druggists for cod-liver oil.

A modern writer of eminence lays it down as one of the most common causes of consumption in

young people, that just at the age when their physical system is undergoing such important changes, that invaluable article of diet, *milk*, is generally dropped, and nothing equally rich in nitrogen substituted in its place.

Exercise, whether as games, the skipping rope, croquet, walking, dancing, riding, and calisthenics, or as regular labor, is highly beneficial, especially when it leads one into the fresh air, the sunshine, and the country. A particular kind of exercise is to be recommended for those whose chests are narrow, whose shoulders stoop, and who have a hereditary predisposition to consumption. If it is systematically practised along with other means of health, we would guarantee any child, no matter how many relatives have died of this disease, against its invasion. It is voluntary inspiration. Nothing is more simple. Let her stand erect, throw the shoulders well back, and the hands behind; then let her slowly inhale pure air to the full capacity of the lungs, and retain it a few seconds *by an increased effort;* then it may be slowly exhaled. After one or two natural inspirations, let her repeat the act, and so on for ten or fifteen minutes, twice daily. Not only is this simple procedure a safeguard against consumption, but, in the opinion of some learned physicians, it can even cure it when it has already commenced.

At first the monthly loss of blood exhausts the system. Therefore, plenty of food, plenty of rest, plenty of sleep, are required. That ancient prejudice in favour of early rising should be discarded now, and the girl should retire early, and if she will,

should sleep late. Hard study, care, or anxiety should be spared her. This is not the time for rigid discipline.

Clothing is a matter of importance, and, if we were at all sure of attention, there is much we would say of it. The thought seriously troubles us, that so long as women consent to deform themselves and sacrifice their health to false ideas of beauty, it is almost hopeless to urge their fitness for, and their right to a higher life than they now enjoy. No educated painter or sculptor is ignorant of what the model of female beauty is; no fashionable woman is content unless she departs from it as far as possible.

Now beauty implies health, and ugliness of form is attained not only at the expense of æsthetics, but of comfort. The custom of fastening growing girls in tight corsets, of flattening their breasts with pads, of distorting their feet in small high-heeled shoes, and of teaching them to stoop and mince in gait, is calculated to disgust every observer of good sense and taste, and, what is of more consequence, to render these girls, when they become women, more liable to every species of suffering connected with child-bearing.

The monthly change is the prelude to maternity. On its healthful recurrence depends present comfort and future health; and not these alone, but also happiness in marriage, easy child-beds, and the constitution of children to a degree the thoughtless girl and even the mature woman rarely understand. She, therefore, who neglects the due care of her own condition, violates a duty owed to others as well as

herself. We would have mothers impress this on their daughters. Let no mistaken modesty prevent them.

Especially at their commencement should the monthly changes be carefully watched. The mother should prepare her daughter's mind betimes for such an expected incident in her life, thus preventing a useless fright, or the employment of injurious means to stop what the child may look upon as an accident.

Nor should the maternal care cease here. Such tender sympathy should exist on the one side, such trusting confidence on the other, that the mother should acquaint herself with every detail of each recurring period until the function is thoroughly established. She should inquire into the duration of each epoch, the abundance of the discharge, the presence of pain, and its effects on the general health. She should convince herself that all these do not vary from the standards of health we have previously laid down. Or should they do so, she should not delay to use the proper means to bring them to that standard.

Long observation proves that if, during the first two or three years which follow the attainment of puberty, the health of the girl is successfully guarded, and this, her most important physical distinction, meets with no derangement, her life-long health is well-nigh secured; but, on the contrary, if she commences her sexual life with pain and disorder, she is likely to be a life-long sufferer.

We are about to approach a topic of vital im-

portance, therefore, in summing up as briefly as may be, the precautions necessary to attain this end. They can most conveniently be divided into those to be observed during the monthly changes, and those more general rules of health to be obeyed in the intervals of the periods.

PRECAUTIONS DURING THE MONTHLY CHANGES.

At the head of all cautions and warnings which we could give about the care of the health at these monthly periods, we put *rest, rest,* bodily and mental. *Do less than usual,* we say to all, whether the necessity for it is manifest or not. Over-exertion is a most fruitful cause of disease. Long walks, shopping, dancing, riding, hard work whether for pleasure or profit, should be avoided to the utmost.

The advantages of rest cannot be over-estimated. A striking example of it occurs to our mind. Most readers are aware how toilsome are the lives of the Indian women among our Western tribes, and also how singularly easy and almost painless is their child-bearing. The pangs of travail are almost unknown to them. The cause of this has puzzled even physicians. We can tell them. It is because it is an inviolable, a sacred rule among all those tribes, for the woman, when having her monthly sickness, to drop all work, absent herself from the lodge, and remain in perfect rest as long as the discharge continues.

Traces of this wide-spread custom among primitive people, extended themselves, are discoverable among civilized lands. The famous general council

of the Christian Church held at Nice in the fourth century, passed a rule disapproving of women coming to church at the times of their menstrual sickness. The cold and dampness of large edifices, the mental excitement and its unfavourable effects and the exertion requisite for long walks to and fro, would justify this rule on purely hygienic grounds, and such may have caused its adoption.

A moderate and uniform temperature favors health at such epochs; while exposure to heat or cold, and the drinking freely of iced water or stimulants should be shunned.

The popular belief that bathing is hurtful, is correct so far as either cold or hot baths are concerned; but it is well to know, in the interests of comfort and cleanliness, that a moderately warm-bath, about 80° Fahr., *will do no injury*. Such a bath can be taken without any hesitation.

We sanction, also, another well-known rule, and that is, that no purgative medicine should be taken immediately before or during the change. If called for by some other disorder, a mild laxative is all that should be administered, unless by the direction of a physician.

PRECAUTIONS IN THE INTERVALS OF THE MONTHLY CHANGES.

If girls suffer from irregularities in this respect, the causes can generally be found either in some affection threatening the general health such as scrofula, consumption, green sickness, etc., or else in their mode of life. For the former, the family physician must be consulted; but if it is the latter

which is at fault, the remedy is in the hands of the parents.

Boarding-school life, city life, mental troubles—these are the three fertile sources of disturbances in the sexual functions of girlhood.

No one rates at higher value than ourselves the training of the mind; but we do not hesitate a moment to urge that if perturbations of the functions become at all marked in a girl at school, she should be *taken away*. Better live at home in seeming idleness a year at that time of life, than become a dead-weight, through constant ill health, on her husband in after life.

So of the unwholesome excitement of a city life. There is a poison in crowds, and it acts in a thousand unseen ways. With the ceaseless noise, the broken sleep, the late hours, the impure air, and the nervous tension which all these produce, it requires no strength of imagination to perceive that the city is not the best place for the delicate girl.

We have mentioned *mental troubles*. Perhaps there are, among those who read this, some superficial enough to smile at the possibility of serious mental troubles in girlhood. There are, we know, many unfeeling enough to give them no attention when they do see them. But we have an unfailing witness in the sympathetic heart of the mother. She has not forgotten how bitter were the crosses of her own younger years; she knows that the sensitive soul of woman wakes early to the keenest appreciation of grief as well as joy. If anything, years blunt us, and the sorrows of youth are often the bitterest of our lives.

Let the mother, therefore, read with her wondrous maternal instinct the trials of her daughter, let her become her most intimate confidant, and pour upon the wounded spirit that balm which none but a woman, and that woman a mother, knows how to apply. Such a relationship of mother and daughter is no less natural and wholesome than it is beautiful.

WHEN THE CHANGES ARE DELAYED.

In health an equal interval, or one nearly equal, elapses between the monthly illnesses. Often in the spring, however, their appearance anticipates the expected date of their occurrence, and in the autumn they are frequently a day or two late. These variations are owing to the temperature, heat accelerating and cold retarding the process of ovulation.

Such slight irregularities need not give rise to anxiety; but if there is an unwonted delay, combined with other symptoms of ill-health, as headache, pain in the side and back, a sense of languor and exhaustion, loss of appetite, and nausea, and fitful sleep, then it is important that some steps be taken to bring on the courses. For this purpose, soaking the feet in hot-mustard water, a tumbler of hot ginger or camomile-tea, a brisk walk, or a gentle laxative will generally be found sufficient. Gently kneading the lower abdomen and loins is a familiar, and if intelligently done, a safe means for the same purpose.

More violent means than these should be eschewed. Whichever are used subsequent to their

employment, rest, in a recumbent position, in a warm room should be secured.

WHEN THE CHANGES ARE PAINFUL.

There are wide individual differences in this respect. Some young women suffer much from local pains, headache and languor at such epochs, without apparently losing anything in general health; others experience no distress whatever.

The causes of painful periods are various. Sometimes they depend on a tendency to rheumatism or to ague. Over-work, or excessive devotion to social duties and pleasures, is often their source. Cold and damp are common incidental causes. Green sickness and general debility are sometimes to blame.

Of course the treatment must depend on which one of these is present. It is a good rule, however, always to wear flannel next the skin; also, to avoid exposure to the weather for several days before the change is expected. A large, hot, linseed-meal poultice, over which a dessert-spoonful of laudanum has been sprinkled, or a large mustard-plaster, spread on the lower abdomen, will afford much relief. A hot brick or bottle of hot water wrapped in flannel, and applied to the small of the back, is often of great service. Rest in bed is always to be recommended. A tea-spoonful of sweet spirits of nitre will sometimes bring early relief.

But if these simple means are not sufficient, it would be better to consult a physician.

A common belief is that such troubles are cured by marriage. Sometimes they are, but we do not approve the remedy. The state of marriage should

be entered upon in perfect health and full vigor. Upon it depends the health of future generations, and it were better for them did only those assume its bonds who are able to endow their children with sound physical frames.

THE AGE OF NUBILITY.

It does not follow, because a girl is capable of marriage, that she is fit for it. Science teaches us many valid objections to too early unions. It goes farther, and fixes a certain age at which it is wisest for woman to marry. This age is between twenty and twenty-five years.

Anatomists have learned that after puberty the bones of a woman's body undergo important modifications to fit her for child-bearing. This requires time, and before twenty the process is not completed. Until the woman is perfect herself, until her full stature and completed form are attained, she is not properly qualified to assist in perpetuating the species.

We might urge that up to this moment neither does her self-knowledge qualify her to choose a life-companion, nor can her education be finished, nor is her experience sufficient for her to enter on the duties of a matron. But we do not appeal to these arguments. There are others still more forcible. If her own health, life, and good looks are of value to her, if she has any wish for healthy, sound minded children, she will refrain from premature nuptials.

A too youthful wife finds marriage not a pleasure but a pain. Her nervous system is prostrated by

it; she is more liable to weakness and diseases of the womb; and if of a consumptive family, she runs great risk of finding that fatal malady manifest itself after a year or two of wedded life. It is very common for those who marry young to die young.

From statistics which have been carefully compiled, it is proven that the first labors of very young mothers are much more painful, tedious, and dangerous to life, than others. As wives, they are frequently visited either with absolute sterility, and all their lives must bear the reproach of barren women, or, what to many is hardly less distasteful, they have an excessively numerous family.

What adds to their sufferings in the latter event, is that the children of such marriages are rarely healthy. They are feeble, sickly, undersized, often with some fault of mind or body, which is a cross to them and their parents all their lives. They inherit more readily the defects of their ancestors, and, as a rule, die at earlier years than the progeny of better-timed unions.

These considerations are formidable enough, it would seem, to prevent young girls from marrying, without the need of a law, as exists in some countries. Moreover, they are not imaginary, but real, as many a woman finds out to her cost.

The objections to marriage after the age of twenty-five are less cogent. They extend only to the woman herself. She should know that the first labors of wives over thirty are nearly *twice* as fatal as those between twenty and twenty-five. Undoubtedly nature points to the period between the

twentieth and twenty-fifth year as the fittest one for marriage in the woman.

LOVE.

ITS POWER ON HUMANITY.

LOVE, pure love, true love, what can we say of it? The dream of youth; the cherished reminiscence of age; celebrated in the songs of poets; that which impels the warrior to his most daring deeds; which the inspired prophet chooses to typify the holiest sentiments,—what new thing is it possible to say about this theme?

Think for a moment on the history or the literature of the world. Ask the naturalist to reveal the mysteries of life; let the mythologist explain the origin and meaning of all unrevealed religions; look within at the promptings of your own spirit, and this whole life of ours will appear to you as one grand epithalamium.

The profoundest of English poets has said—

> 'All thoughts, all passions, all delights,
> Whatever stirs this mortal frame,
> All are but ministers of Love,
> And feed his sacred flame.'

That life which is devoid of love is incomplete, sterile, unsatisfactory. It fails of its chiefest end. Nature, in anger, blots it out sooner, and it passes like the shadow of a cloud, leaving no trace behind. Admirable as it may be in other respects, to the

eye of the statesman, the physician, the lover of his species, it remains but a fragment, a torso.

Love is one thing to a woman, another to a man. To him, said Madame de Stael, it is an episode; to her, it is the whole history of life. A thousand distractions divert man. Fame, riches, power, pleasure, all struggle in his bosom to displace the sentiment of love. They are its rivals, not rarely its masters. But woman knows no such distractions. One passion only sits enthroned in her bosom; one only idol is enshrined in her heart, knowing no rival, no successor. This passion is love! this idol is its object.

This is not fancy, not rhetoric; it is the language of cold and exact science, pronounced from the chair of history, from the bureau of the statistician, from the dissecting table of the anatomist. We shall gather up their well-weighed words, and present them, not as fancy sketches, but as facts.

This deep, all-absorbing, single, wondrous love of woman, is something that man cannot understand. This sea of unfathomed depth is to him a mystery. The shallow mind sees of it nothing but the rippling waves, the unstable foam-crests dashing hither and thither, the playful ripples of the surface, and, blind to the still and measureless waters beneath, calls woman capricious, uncertain,—*varium et mutabile* But the thinker and seer, undeceived by such externals, knows that beneath this seeming change is stability unequalled in the stronger sex, a power of will to which man is a stranger, a devotion and purpose which strike him with undefined awe

Therefore, in the myths and legends which the early races framed to express their notions of divine things,—the Fates, who spin and snip the thread of life; the Norns, who

> Lay down laws,
> And select life
> For the children of time—
> The destinies of men.—

are always females. The seeresses and interpreters of oracles—those who, like the witch of Endor, could summon from the grave the shades of the departed—were women.

Therefore, also, modern infidelity, going back, as it ever does, to the ignorance of the past, and holding it up as something new, makes woman the only deity. Comte and his disciples, having reasoned away all gods, angels, and spirits, and unable to still the craving for something to adore, agree to meet once a week to worship—woman. The French revolutionists, having shut up the churches and abolished God by a decree of the Convention, set up in His stead—a woman.

We could never exhaust this phase of world-history. Everywhere we see the unexpected hand of Love moulding, fashioning all things. The fortunes of the individual, the fate of nations, the destinies of races, are guided by this invisible thread. Let us push our inquiries as to the nature of this all-powerful agent.

WHAT IS LOVE?

It has a divided nature. As we have an immortal soul, but a body of clay; as the plant roots

itself in decaying earth, but spreads its flowers in glorious sunlight,—so love has a physiological and a moral nature. It is rooted in that unconscious law of life which bids us perpetuate our kind; which guards over the conservation of life; which enforces, with ceaseless admonition, that first precept which God gave to man before the gates of Eden had been closed upon him: 'Be thou fruitful, and multiply, and replenish the earth.' Nothing but a spurious delicacy, or an ignorance of facts, can prevent our full recognition that love looks to marriage, and marriage to offspring, as a natural sequence.

Do we ask proofs of this? We have them in abundance. Those unfortunate beings who are chosen by Oriental custom to guard the seraglios undergo a mutilation which disqualifies them from becoming parents. Soon all traces of passion, all regard for the other sex, all sentiments of love, totally disappear. The records of medicine contain not a few cases where disease had rendered it necessary to remove the ovaries from women. At once a change took place in voice, appearance, and mind. They spoke like men, a slender beard commenced on their faces, a masculine manner was conspicuous in all their motions, and every thought of sexual love passed away for ever. These are the results in every case. What do they signify? Undoubtedly that the passion of love is dependent upon the capacity of having offspring, and that such was the intention of Nature in implanting in our bosom this all-powerful sentiment.

But this is not all. Nature, as beneficent to

those who obey her precepts as she is merciless to those who disregard them, has added to this sentiment of love a physical pleasure in its gratification, —an honourable and proper pleasure, which none but the hypocrite or the ascetic will affect to contemn, none but the coarse or the lewd will regard as the object of love. There is, indeed, a passion which is the love of the body. We call it by its proper name of *lust*. There is another emotion, for which the rich tongue of the ancient Greeks had a word, to which we have nothing to correspond. Call it, if you will, Platonic love, and define it to be an exalted friendship. But understand that neither the one nor the other is *love*, in the true sense of the word, and that *both* are inferior to it.

Does the father, watching, with moistened eyes, his child at its mother's breast; does the husband, bending with solicitude over the sick-bed of his wife; does the wife, clinging to her husband through evil report and good report, through broken fortunes and failing health, indicate no loftier emotion than *lust*, no warmer sentiment than *friendship*? What ignorance, what perversity is so gross as not to perceive something here nobler than either? Do you say that such scenes are, alas, rare? We deny it. We see them daily in the streets; we meet them daily in our rounds. Admitted, by our calling, to the sacred precincts of many houses in the trying hours of sickness and death, we speak advisedly, and know that this is the prevailing meaning of love in domestic life.

A warm, rich affection blesses the one who gives and the one who receives. Character developes

under it as the plant beneath the sunlight. Happiness is an unknown word without it. Love and marriage are the only normal conditions of life. Without them, both man and woman for ever miss the best part of themselves. They suffer more, they sin more, they perish sooner. These are not hasty assertions. As a social law, let it be well understood that science pronounces that

LOVE IS A NECESSITY.

The single life is forced upon many of both sexes, in our present social condition. Many choose it from motives of economy, from timidity, or as a religious step, pleasing to God. The latter is a notion which probably arose from a belief that, somehow, celibacy, strictly observed, means chastity. It simply means continence. The chastest persons have been, and are, not the virgins and celibates, but the married. When this truth is known better, we shall have fewer sects and more religion.

We know women who refrain from marrying to keep out of trouble. The old saying is, that every sigh drives a nail in one's coffin. They are not going to worry themselves to death bearing children and nursing them! It is too great a risk, too much suffering. How often have we been told this! Yet how false the reasoning is! Very carefully prepared statistics show that between the ages of twenty and forty-five years, more unmarried women die than married, and few instances of remarkable longevity in an old maid are known. The celebrated Dr. Hufeland, therefore, in his treatise on the *Art*

of Prolonging Life, lays it down as a rule, that to attain a great age, one must be married.

As for happiness, those who think they can best attain it outside the gentle yoke of matrimony are quite as wide of the mark. Their selfish and solitary pleasures do not gratify them. With all the resources of clubs, billiard-rooms, saloons, narcotics, and stimulants, single men make but a mock show of satisfaction. At heart every one of them envies his married friends. How much more monotonous and more readily exhausted are the resources of woman's single life! No matter what 'sphere' she is in, no matter in what 'circle' she moves, no matter what 'mission' she invents, it will soon pall on her. Would you see the result? We invoke once more those dry volumes, full of lines and figures, on vital statistics. Stupid as they look, they are full of the strangest stories; and what is more, the stories are all true. Some of them are sad stories, and this is one of the saddest: Of those unfortunates who, out of despair and disgust of the world, jump from bridges, or take arsenic, or hang themselves, or in other ways rush unbidden and unprepared before the great Judge of all, *nearly two-thirds* are unmarried, and in some years nearly *three-fourths*. And of those other sad cases —dead, yet living—who people the madhouses and asylums, what of them? Driven crazy by their brutal husbands, do you suggest? Not at all! In France, Bavaria, Prussia, Hanover, four out of every five are unmarried; and throughout the civilised world there are everywhere three or four single to one married woman in the establishments

for the insane, in proportion to the whole number of the two classes above twenty-one years of age.

Other women decline to marry because they have, forsooth, a 'life work' to accomplish. Some great project fills their mind. Perchance they emulate Madame de Stael, and would electrify the country by their novel views in politics; or they have a literary vein they fain would exploit; or they feel called upon to teach the freedmen, or to keep their position as leaders of fashion. A husband would trammel them. If they did marry, they would take the very foolish advice of a contemporary, and go through life with an indignant protest at its littleness. Let such women know that they underrate the married state, its powers and its opportunities. There are no loftier missions than can there be carried out, no nobler games than can there be played. When we think of these objections, coming, as they have to us, from high-spirited, earnest girls, the queens of their sex, our memory runs back to the famous women of history, the brightest jewels in the coronet of time, and we find as many, ay, more, married women than single who pursued to their ends mighty achievements.

If you speak of Judith and Joan of Arc, who delivered their fatherlands from the enemy by a daring no man can equal, we shall recall the peaceful victories of her, wife of the barbarian Chlodwig, who taught the rude Franks the mild religion of Nazareth, and of her who extended from Byzantium the holy symbol of the cross over the wilds of Russia. The really great women of this age, are they mostly married or single? They are mostly

married, and they are good wives and tender mothers.

What we have just written, we read to an amiable woman.

'But,' she exclaimed, 'what have you to say to her whom high duties or a hard fate condemns to a single life, and to the name of the old maid?'

Alas! what can we say to such? We feel that

> 'Earthlier happy is the rose distilled,
> Than that which, withering on the virgin thorn,
> Grows, lives, and dies in single blessedness.'

Yet there is ever a blessing in store for those who suffer here, and the hope of the future must teach them to bear the present.

LOVE IS ETERNAL.

We have said love is a necessity in the life of either man or woman to complete their nature. Its effects, therefore, are eternal. We do not intend this as a figure of speech. It is a sober statement of physiology.

From the day of marriage the woman undergoes a change in her whole structure. She is similar to her former self, but not the same. It is often noticed that the children of a woman in her second marriage bear a marked resemblance to her first husband. In the inferior races and lower animals this obscure metamorphosis is still more apparent. A negress who has borne her first child to a white man, will ever after have children of a color lighter than her own. Count Strzelewski, in his Travels in Australia, narrates this curious circumstance: A

native woman who has once had offspring by a white man, can never more have children by a male of her own race. Dr. Darwin relates that a male zebra was once brought to England, and a hybrid race, marked by the zebra's stripes, was produced from certain mares. Always after, the colts of those mares bore the marks of the zebra on their skins. In some way the female is profoundly altered throughout her whole formation, and entirely independent of her will, by the act of marriage, and the alteration is never effaced.

If the body is thus influenced, shall not the far more susceptible mind and spirit be equally impressed?

Another common observation supports what we say, and extends it farther. Not the woman alone, —the man also undergoes a change, and loses a portion of his personality in his mate. They two are one, not merely in a moral sense. We constantly notice a decided resemblance in old couples who have passed, say, two score years together. They have grown to look alike in form, feature, and expression. That for so long a time they have breathed the same air, eaten the same fare, and been subjected to the same surroundings, explains this to some extent. But the greater part of the change flows from mental sources. They have laughed and wept together; they have shared the same joys and pleasures; a smile or a tear on the face of one has evoked a corresponding emotion and expression on the face of the other. Their copartnership has become a unity. Even without speaking, they sympathize. Their souls are constantly *en rapport*.

The man is as different as the woman from his former self.

OF SECOND MARRIAGES.

Science, therefore, seems to say to woman, 'Your first husband is your eternal husband.' How, then, about second marriages? Are we to say that they are not advisable?

Let us not answer hastily. It is yet to be seen whether ill-assorted marriages produce those impressions we have mentioned. They may, indeed, on the body, while the mind is free. One must remember, also, that the exigencies of social life must be consulted. If a woman cannot love two men equally,—and she cannot,—other motives, worthy of all respect, justify her in entering the marriage life a second time. Then, the higher refinements of the emotions are not given to all alike, nor do they come at the same age to all. True love may first dawn upon a woman after one or two husbands have left her a widow. Orphan children, widowhood, want of property, or the care of property,—these are sad afflictions to the lonely woman. Do not blame her if she accepts a husband as a guardian, a protector, whom she can no longer receive to her arms as a lover. She is right.

We cherish the memory of a lady of strong character, who died past eighty. She had survived three husbands. 'The first,' she said, 'I married for love, the second for position, the third for friendship. I was happy with them all.' But when, in her mortal illness, this venerable friend sank into the delirium which preceded death, she constantly

called out the name of her first husband only. More than half a century had not effaced the memory of those few years of early love. This is fidelity indeed.

OF DIVORCE.

He of Nazareth laid down the law that whoever puts away his wife for any cause except adultery, and marries again, commits adultery; and that whatever woman puts away her husband for any cause save adultery, and marries again, herself commits adultery.

This has been found a hard saying.

John Milton wrote a book to show that the Lawgiver did not mean what He said, but something quite different. Modern sects, calling themselves *Christians*, after this Lawgiver, dodge the difficulty, and refer it to State legislatures. State legislatures, not troubling themselves at all about any previous law or lawgiver, allow dozens of causes—scores of them—as perfectly valid to put asunder those whom God has joined together.

Science, which never finds occasion to disagree with that Lawgiver of Nazareth, here makes His words her own.

Whether we look at it as a question in social life, in morals, or in physiology, the American plan of granting absolute divorces is dangerous, and destructive to what is best in life. It leads to hasty, ill-assorted matches, to an unwillingness to yield to each other's peculiarities, to a weakening of the family ties, to a lax morality. Carry it a trifle farther than it now is in some of the Western

States, and marriage will lose all its sacredness, and degenerate into a physical union, not nobler than the crossing of flies in the air.

Separation of bed and board should always be provided for by law; and whether single, married, or separated, the woman should retain entire control of her own property. But in the eyes of God and nature, a woman or a man with two faithful spouses living, to each of whom an eternal fidelity has been plighted, is a monster.

OF A PLURALITY OF WIVES OR HUSBANDS.

What has been said of divorce applies with tenfold force to the custom of a woman living as wife to several men, or of a man as husband to several women. We should not speak of these customs, but that we know both exist in America, not among the notoriously wicked, but among those who claim to be the peculiarly good—the very elect of God They prevail, not as lustful excesses, but as religious observances.

It is worth while to say that such practices lead to physical degradation. The woman who acknowledges more than one husband is generally sterile; the man who has several wives has usually a weakly offspring, principally males. Nature attempts to check polygamy by reducing the number of females, and failing in this, by enervating the whole stock. The Mormons of Utah would soon sink into a state of Asiatic effeminacy were they left to themselves.

COURTSHIP.

A wise provision of nature ordains that *woman shall be sought.* She flees, and man pursues. The folly of modern reformers, who would annul this provision, is evident. Were it done away with, man, ever prone to yield to woman's solicitations, and then most prone when yielding is most dangerous, would fritter away his powers at an early age, and those very impulses which nature has given to perpetuate the race would bring about its destruction.

To prevent such a disaster, woman is endowed with a sense of shame, an invincible modesty, her greatest protection, and her greatest charm. Let her never forget it, never disregard it; for without it she becomes the scorn of her own sex and the jest of the other.

The urgency of man and the timidity of woman are tempered by the period of courtship.

This, as it exists in the United States, is something almost peculiar to Americans. On the continent of Europe, girls are shut up in convents or in seminaries, or are kept strictly under the eyes of their parents until marriage, or, at any rate, betrothal. The liberty usual in America is something unheard-of and inconceivable there. In Spain a duenna, in France some aunt or elderly cousin, in Germany some similar person, makes it her business to be present at every interview which a young lady has with an admirer. He never dreams of walking, driving, or going out of an evening with her alone. It is taken for granted that, should he

invite her for such a purpose, the mother or aunt is included in the party. They would look on the innocent freedom of American girls as simply scandalous.

We have had opportunities to see society in these various countries, and have failed to perceive that the morality of either sex is at all superior to what it is with us, while the effect of cloister-like education on young women is to weaken their self-reliance, and often prepare them for greater extravagances when marriage gives them liberty.

With us, the young woman is free until her wedding day. After that epoch, she looks forward to withdrawing more or less from society, and confining her thoughts to family matters. In France, Spain, or Italy, in the wealthier classes, precisely the contrary is the rule. Marriage brings deliverance from an irksome espionage and numberless fetters; it is the avenue to a life in public and independent action How injurious to domestic happiness this is, can readily be imagined.

It is true that the liberty of American girls occasionally leads to improprieties. But, except in certain great cities, such instances are rare. The safeguards of virtue are knowledge and self-command, not duennas and *jalousies*. Let mothers properly instruct their daughters, and they need have no apprehension about their conduct.

The period of courtship is one full of importance A young woman of unripe experience must decide from what she can see of a man during the intercourse of a few months, whether he will suit her for a life-companion. She has no knowledge of

human nature; and what would it avail her if she had, when at such a time a suitor is careful only to show his eligible traits? 'Go a-courting,' said old Dr. Franklin, in his homely language, 'in your everyday clothes.' Not one man out of a thousand is honest enough to take his advice.

It is useless for her to ask aid of another. She must judge for herself. What, then, is she to do?

There is a mysterious instinct in a pure-minded woman which is beyond all analysis,—a tact which men do not possess, and do not readily believe in. At such a crisis this instinct saves her. She feels in a moment the presence of a base, unworthy nature. An unconscious repulsion is manifest in her eye, her voice. Where a suitor is not a man of low motive, but merely quite incongruous in temper and disposition, this same instinct acts, and the man, without being able to say just why, feels that he is laboring in vain. If he blindly insists in his wooing, he has no one to chide but himself when he is finally discarded.

But if the man is worthy, and suitable, does this blessed instinct whisper the happy news with like promptness to the maiden's soul? Ah! that raises another issue. It brings us face to face with that difficult question of

LOVE AT FIRST SIGHT.

Jung Stilling, a German author of note, a religious enthusiast, and full of queer fancies, was, when young, a tutor in a private family. On one occasion his employer took him to a strange house, and

introduced him to a roomful of company. Stilling had not contemplated marriage; but, in the company, he saw, for the first time, a young woman who he felt was his destined wife. Walking across the room, he addressed her with the utmost simplicity, telling her that an inward monitor advised him that she, of all womankind, was his predestined helpmeet. She blushed, was confused, but presently confessed that she had experienced the same conviction on first beholding him. They married, and the most curious part of the tale remains to tell,—it is, that they proved a happy, well-matched couple.

We do not advise others to follow their example. Not many souls are capable of such reciprocity. Choosing an associate for life is too serious a business to be made the affair of a moment. Reason, reflection, thought, prayer,—these are aids in such a momentous question not to be lightly thrown aside. Many a passing fancy, many an evanescent preference, catches for a moment the new-fledged affections. But for the long and tedious journey of life we want a love rooted in knowledge.

We are not blind to the fact, that often from the first interview the maiden feels an undefined spell thrown around her by him who will become her husband. She feels differently in his presence; she watches him with other eyes than she has for the rest of men. She renders no account to herself of this emotion; she attempts no analysis of it; she does not acknowledge to herself that it exists. No matter. Sooner or later, if true to herself, she will learn what it is, and it will be a guide in that moment, looked forward to with mingled hopes and

fears, when she is asked to decide on the destiny, the temporal and eternal destiny, of two human lives.

That she may then decide aright, and live free from the regrets of a false step at this crisis of life, we shall now rehearse what medical science has to say about

HOW TO CHOOSE A HUSBAND.

'Choose well. Your choice is
Brief, and yet endless.'

Woman holds as an inalienable right, in this country, the privilege of choice. It is not left to notaries, or parents, to select for her, as is the custom in some other parts of the world.

First comes the question of relationship. A school-girl is apt to see more of her cousins than of other young men. Often some of them seek at an early hour to institute a far closer tie than that of blood. Is she wise to accept it?

SHALL COUSINS MARRY?

Hardly any point has been more warmly debated by medical men. It has been said that in such marriages the woman is more apt to be sterile; that if she have children, they are peculiarly liable to be born with some defect of body or mind,—deafness, blindness, idiocy, or lameness; that they die early; and that they are subject, beyond others, to fatal hereditary diseases, as cancer, consumption, scrofula, etc.

An ardent physician persuaded himself so thoroughly of these evils resulting from marriage

of relatives, that he induced the Legislature of Kentucky to pass a law prohibiting it within certain degrees of consanguinity. Many a married couple have been rendered miserable by the information that they had unwittingly violated one of nature's most positive laws. Though their children may be numerous and blooming, they live in constant dread of some terrible outbreak o disease. Many a young and loving couple have sadly severed an engagement, which would have been a prelude to a happy marriage, when they were informed of these disastrous results.

For all such we have a word of consolation. We speak it authoritatively, and not without a full knowledge of the responsibility we assume.

The fear of marrying a cousin, even a first cousin, is entirely groundless, provided there is no decided hereditary taint in the family. And when such hereditary taint does exist, the danger is not greater than in marrying into any other family where it is also found. On the contrary, a German author has urged the propriety of such unions, where the family has traits of mental or physical excellence, as a means of preserving and developing them.

So far as sterility is concerned, an examination of records shows, that whereas in the average of unions one woman in *eight* is barren, in those between relatives but one in *ten* is so. And as for the early deaths of children, while, on an average, fifteen children in a hundred die under seven years, in the families of nearly-related parents but twelve in a hundred is the mortality.

The investigations about idiotic and defective

children are by no means satisfactory, and are considered by some of the most careful writers as not at all proving a greater tendency to such misfortunes in the offspring of cousins. Among a thousand idiotic children recently examined in Paris, not one was descended from a healthy consanguinity.

But as few families are wholly without some lurking predisposition to disease, it is not well, as a rule, to run the risk of developing this by too repeated unions. Stock-breeders find that the best specimens of the lower animals are produced by crossing nearly-related individuals a certain number of times; but that, carried beyond this, such unions lead to degeneracy and sterility. Such, also, has been the experience of many human families.

How slight a cause even of that most insidious disease, consumption, such marriages are, may be judged from the fact, that of a thousand cases inquired into by Dr. Edward Smith, in only six was there consanguinity of parents.

THE MIXTURE OF RACES.

Mankind, say the school geographies, is divided into five races, each distinguished by its own color. They are the white, the black, the red, the yellow, and the brown races. In this country, practically, we have to do with but the white and black races; and the question is constantly asked, Shall we approve of marriages between them? Shall a white woman choose a black man to be her husband?

We are at the more pains to answer this, because recently a writer—and this writer a woman, and

this woman one of the most widely known in our land — has written a novel intended to advocate the affirmative of this question. Moreover, it is constantly mooted in certain political circles, and is one of the social problems of the day.

The very fact that it is so much discussed, shows that such a union runs counter to a strong prejudice. Such aversions are often voices of nature, acting as warnings against acts injurious to the species. In this instance it is not of modern origin, created by peculiar institutions. Three centuries ago, Shakspeare, who had probably never seen a score of negroes in his life, with the divination of genius, felt the repugnance which a refined woman would feel to accepting one as her husband. The plot of one of his plays turns on it. He makes Iago say of Desdemona:

> 'Not to affect many proposed matches
> Of her own clime, complexion, and degree;
> Whereto, we see, in all things nature tends:
> Foh! one may smell in such a will most rank,
> Foul disproportions, thoughts unnatural.'

It is, indeed, 'nature erring from itself' which prompts to these marriages. They are not sterile, but the children are sickly and short-lived. Very few mulattoes reach an old age.

Then it is well known that the black race cannot survive a northern climate. Dr. Snow, of Providence, Rhode Island, who has given great attention to the study of statistics, says emphatically that, in New England, the colored population inevitably perish in a few generations, if left to themselves.

This debility no woman should wish to give to her children.

A mental inferiority is likewise apparent. Friends of the negro are ready to confess this, but attribute it to his long and recent period of servitude. We deal with facts only. The inferiority is there, whatever be its cause; and she who would willingly curse her offspring with it, manifests indeed 'thoughts unnatural.'

The children born of a union of the black and red race, negroes and Indians, are. on the contrary, remarkable for their physical vigor and mental acuteness; though, of course, the latter is limited to the demands of a semi-barbarous life.

SHOULD NATIVE WOMEN MARRY FOREIGNERS?

When we narrow the question of race to that of nationality, entirely new elements come in.

In speaking of the intermarriage of relatives, we showed that a certain number of such unions in healthy stocks was advantageous rather than otherwise, but that too many of them lead to deterioration. This law can be applied to nations. Historians have often observed that the most powerful states of the world arose from an amalgamation of different tribes. Rome, Greece, England, are examples of this. On the other hand, France, Russia, Spain, China, Persia, which have suffered no such crosses of blood, are either stationary, or depend for their progress on foreigners.

Physicians have contributed other curious testimony on this point, the bearing of which they themselves have not understood. Marriages between

nationalities of the same race are more fertile, and the children more vigorous, than those between descendants of the same nation. For instance, it has been proved that if two descendants of the 'Pilgrim Fathers' in Massachusetts marry, they will probably have but three children; while, if one of them marries a foreigner, the children will number five or six.

So it is well ascertained that in the old and stationary communes of France, where the same families have possessed their small farms for generation after generation, the marriages have become gradually less and less productive, until it has seriously interfered with the quota those districts send to the army.

American women have suffered many hard words because they do not have more children. Several New England writers have accused them of very bad practices, which we shall mention hereafter. But the effect of the law of production just now laid down has been quite overlooked.

As it is best that there should be four or five children in a family in ordinary circumstances, the union of American and foreign blood is very desirable. We need to fuse in one the diverse colonies of the white race annually reaching our shores. A century should efface every trace of the German, the Irish, the Frenchman, the English, the Norwegian, and leave nothing but the American. To bring about this happy result, free intermarriage should be furthered in every possible way.

THE AGE OF THE HUSBAND.

The epoch of puberty comes to a boy at about the same age as it does to a girl,—fourteen or fifteen years. And an even greater period passes between this epoch and the age it is proper for a man to marry,—his age of nubility.

Not only has he a more complete education to obtain, not only a profession or trade to learn, and some property to accumulate, some position to acquire, ere he is ready to take a wife, but his physical powers ripen more slowly than those of woman. He is more tardy in completing his growth, and early indulgence more readily saps his constitution.

We have placed the best age for woman to marry between twenty and twenty-five years; for similar reasons, man is best qualified to become a husband between twenty-three and thirty-three years.

Previous to the twenty-third year, many a man is incapable of producing healthy children. If he does not destroy his health by premature indulgence, he may destroy his happiness by witnessing his children a prey to debility and deformity. An old German proverb says, 'Give a boy a wife, and a child a bird, and death will soon knock at the door.' Even an author so old as Aristotle warns young men against early marriage, under penalty of disease and puny offspring.

From the age of thirty-three to fifty years, men who carefully observe the laws of health do not feel any weight of years. Nevertheless, they are past their prime. Then, also, with advancing years, the

chances of life diminish, and the probability increases that they will leave a young family with no natural protector. The half-century once turned, their vigor rapidly diminishes. The marriages they then contract are either sterile, or yield but few and sickly children. Many an old man has shortened his life by late nuptials; and the records of medicine contain accounts of several who perished on the very night of marriage.

The relative age of man and wife is next to be considered. Nature fits woman earlier for marriage, and hints thereby that she should, as a rule, be younger than her husband. So, too, the bard of nature speaks:

> 'Let still the woman take
> An elder than herself; so wears she to him,
> So sways she level in her husband's heart.'

The woman who risks her happiness with a man many years younger than herself, violates a precept of life; and when her husband grows indifferent, or taunts her with her years, or seeks companions of more suitable age, she is reaping a harvest sown by her own hand.

So commonly do such matches turn out badly, that in 1828 the kingdom of Würtemberg prohibited unions where the woman was more than twelve years the senior, except by special dispensation.

After forty-five years, most women cannot hope for children. A marriage subsequent to this period can at best be regarded as a close friendship. Marriage in its full meaning has no longer an existence.

The relative age of man and wife has another influence, and quite a curious one. It influences the sex of the children. But this point we reserve for discussion on a later page.

The folly of joining a young girl to an old man is happily not so common in America as in Europe. It would be hard to devise any step more certain to bring the laws of nature and morality into conflict.

'What can a young lassie do wi' an auld man?'

What advice can we give to a woman who barters her youthful charms for the fortune of an aged husband? Shall we be cynical enough to agree with 'auld Auntie Katie?'

'My auld Auntie Katie upon me takes pity;
I'll do my endeavor to follow her plan:
I'll cross him, and rack him, until I heart-break him,
And then his auld brass will buy me a new pan.'

No! She has willingly accepted a responsibility. It is her duty to bear it loyally, faithfully, uncomplainingly to the end.

Let us sum up with the maxim, that the husband should be the senior, but that the difference of age should not be more than ten years.

WHAT SHOULD BE HIS TEMPERAMENT?

It is often hard to make out what doctors mean by *temperaments*. It is supposed that our mental and physical characters depend somehow on the predominance of some organ or system which con-

trols the rest. Thus a person who is nervous, quick, sensitive to impressions, is said to have a *nervous* temperament; one who is stout, full-blooded, red-faced, has a *sanguine* temperament; a thin, dark-featured, reticent person, is of a *bilious* temperament; while a pale, fat, sluggish nature, is called *phlegmatic*, or *lymphatic*.

In a general way these distinctions are valuable, but they will not bear very exact applications. They reveal in outline the constitution of mind and body; and what is to our present purpose, they are of more than usual importance in the question of selecting a husband.

Nature, hating incongruity, yet loves variety She preserves the limits of species, but within those limits she seeks fidelity to one type. Therefore it is that in marriage a person inclines strongly to one of a different temperament—to a person quite unlike himself.

So true is this, that a Frenchman of genius, Bernardin de St. Pierre, vouches for this anecdote of himself. He was in a strange city, visiting a friend whom he had not seen for years. The friend's sister was of that age when women are most susceptible. She was tall, a blonde, deliberate in motion, with blue eyes and fair hair. In a jesting way, St. Pierre, who had never seen her before, and knew nothing of her personal life, said,—

'Mademoiselle, you have many admirers. Shall I describe him on whom you look with most favor?'

The lady challenged him to do so.

'He is short in stature, of dark complexion, dark

hair and eyes, slight in figure, active and nervous in all his movements.'

The lady blushed to her eyes, and cast a glance of anger at her brother, who, she thought, had betrayed her secret. But no! St. Pierre's only informant was his deep knowledge of the human heart.

This instinct is founded upon the truth that the perfect temperament is that happily balanced one which holds all the organs in equilibrium,—in which no one rules, where all are developed in proportion. Nature ever strives to realize this ideal. She instils in the nervous temperament a preference for the lymphatic; in the sanguine, a liking for the bilious constitution. The offspring should combine the excellencies of both, the defects of neither. We do well to heed her admonitions here, and to bear in mind that those matches which combine opposite temperaments, are, as a rule, the most fortunate.

THE MORAL AND MENTAL CHARACTER.

Very few words are necessary here. We have already said we speak as physicians, not as moralists. But there are some false and dangerous ideas abroad, which it is our duty as physicians to combat

None is more false, none more dangerous, than that embodied in the proverb, 'A reformed rake makes the best husband.' What is a rake? A man who has deceived and destroyed trusting virtue,—a man who has entered the service of the devil to undermine and poison that happiness in

marriage, which all religion and science are at such pains to cultivate. We know him well in our capacity as physicians. He comes to us constantly the prey to loathsome diseases, the results of his vicious life; which diseases he will communicate to his wife, for they are contagious, and to his children, for they are hereditary; and which no reform can purge from his system, for they are ineradicable.

Is this the man a pure woman should take to her arms? Here repentance avails nothing. We have witnessed the agony unspeakable which overwhelmed a father when he saw his children suffering under horrible and disgusting diseases, the penalty of his early sins.

Very few men of profligate lives escape these diseases. They are alarmingly prevalent among the 'fast' youths of our cities. And some forms of them are incurable by any effort of skill. Even the approach of such men should be shunned,—their company avoided.

A physician in central Pennsylvania lately had this experience: A young lady of unblemished character asked his advice for a troublesome affection of the skin. He examined it, and to his horror recognised a form of one of the loathsome diseases which curse only the vilest or the most unfortunate of her sex. Yet he could not suspect this girl. On inquiry, he found that she had a small but painful sore on her lip, which she first noticed a few days after being at a picnic with a young man. Just as he was bidding her good-night, he had kissed her on the lips.

At once everything was clear. This young man

was a patient of the physician. He was a victim to this vile disease, and even his kiss was enough to convey it.

The history of the sixteenth century contains the account of an Italian duke, who on one occasion was forced by his ruler to reconcile himself with an enemy. Knowing he could not escape obedience, he protested the most cheerful willingness, and in the presence of the king embraced his enemy, and even kissed him on the lips. It was but another means of satisfying his hatred. For he well knew that his kiss would taint his enemy's blood with the same poison that was undermining his own life.

How cautious, therefore, should a woman be in granting the most innocent liberties! How solicitous should she be to associate with the purest men!

Would that we could say that these dangerous and loathsome diseases are rare! But, alas! daily professional experience forbids us to offer this consolation. Every physician in our large cities, and even in smaller towns, knows that they are fearfully prevalent.

We have been consulted by wives, pure, innocent women, for complaints which they themselves, and sometimes their children, suffered from, the nature of which we dared not tell them, but which pointed with fatal finger to the unfaithfulness of the husband. How utterly was their domestic happiness wrecked when they discovered the cause of their constant ill-health!

Nor are such occurrences confined to the humbler

walks of life. There, perhaps, less than in any other do they occur. It is in the wealthy, the luxurious, the self-indulgent class that they are found.

Are we asked how such a dreadful fate can be averted?

There are, indeed, certain signs and marks which such diseases leave with which physicians are conversant. As if nature intended them as warnings, they are imprinted on the most visible and public parts of the body. The skin, the hair, the nose, the voice, the lines on the face, often divulge to the trained observer, more indubitably than the confessional, a lewd and sensual life.

Such signs, however, can only be properly estimated by the medical counsellor, and it would be useless to rehearse them here. Those women who would have a sure guide in choosing a man to be their husband, have they not Moses and the prophets? What is more, have they not Christ and the apostles? Rest assured that the man who scoffs at Christianity, who neglects its precepts and violates its laws, runs a terrible risk of bringing upon himself, his wife, and his children, the vengeance of nature, which knows justice but not mercy. Rest assured that the man who respects the maxims of that religion, and abstains from all uncleanness, is the only man who is worthy the full and confiding love of an honorable woman.

THE SYMBOLISM OF THE HUMAN BODY.

Philosophers say that every idle word which is spoken continues to vibrate in the air through all infinity. So it is with the passions and the thoughts. Each impresses on the body some indelible mark, and a long continuance of similar thoughts leaves a visible imprint.

Under the names of phrenology, physiognomy, palmistry, and others, attempts have been made at divers times to lay down fixed principles by which we could judge of men by their outsides; but only vague results have been obtained. A learned German author, of high repute in exact science, has gone a different way to work. He has studied the body as a whole, and sought with the eye of an anatomist how different avocations, passions, temperaments, habits, mould and fashion the external parts of man. His results are embraced in a curious volume which he entitles *The Symbolism of the Human Body*. We shall borrow some hints from it, germane to our present theme.

As to size, large-bodied and large-boned men possess greater energy, a more masculine character, but often less persistence, and are usually devoid of the more delicate emotions. Fat people are good-tempered, but indolent; thin people, full of life, but irascible.

The neck is a significant part of the body. View it from in front, and it discloses the physical constitution. There are the conduits of the food and the air; there, the great blood-vessels pass to the head, and its base is modified by their form as

they pass from the heart. When broad and full, it denotes a vigorous physical life,—a plethoric constitution. A distinguished teacher of midwifery, Professor Pajot of Paris, says that when he sees one of those necks full in front, like that of Marie Antoinette, as shown in her portraits, he prepares himself to combat child-bed convulsions. That queen, it is well-known, nearly perished with them.

The back of the neck contains the vertebral column, and is close to the brain. It reveals the mental constitution. The short round neck of the prize-fighter betrays his craft. The slender, arched, and graceful neck of the well-proportioned woman is the symbol of health and a well-controlled mind. Burke, in his *Essay on the Beautiful*, calls it the most beauteous object in nature. It is a common observation, that a sensual character is shown by the thick and coarse development of this portion of the body.

The hair, also, has a significance. Fine whitish hair, like that of a child, goes with a simple, child-like disposition; black hair denotes a certain hardness of character; red hair has long been supposed to be associated with a sensual constitution, but it rather indicates a physical weakness,—a tendency to scrofula. This is, however, a tendency merely. Thin hair is often the result of protracted mental labor, though many other causes produce it.

Every great man, says Herder, has a glance which no one can imitate. We may go farther, and say that every man of decided character reveals it in his eyes. They are the most difficult organs for the hypocrite to control. Beware of the man

who cannot look you in the eyes, and of him in whose eyes there lurks an expression which allures yet makes you shudder. The one has something he dares not tell you, the other something you dare not listen to.

Symmetry, strength, grace, health,—these are admirable qualities in a man. From the remotest ages they have been the marks of heroes. Secondary though they are to moral and mental qualities, they should be ever highly valued. A *manly* man! Nature designs such to be the sires of future generations. No danger that we shall fall to worshipping physical beauty again. The only fear is, that in this lank, puny, scrawny generation of ours, we shall, out of vanity, underrate such beauty. Let it be ever remembered that this is the ideal, from which any departure is deterioration.

THE ENGAGEMENT.

When our grandmothers were engaged, the minister rose in his pulpit on Sunday morning, before the assembled congregation, and proclaimed the 'banns,' stating that if any one knew just cause or lawful impediment why the lovers should not be married, he should state it there and then. Sometimes a great hubbub was created when some discarded suitor rose, forbidding the banns, and claimed that the capricious maiden had previously promised herself to him. Perhaps it was to avoid such an uncomfortable check on the freedom of flirtation that the ancient custom was dropped.

Certain it is, that to be 'engaged' sits very lightly on the minds of both young men and

maidens now-a-days. We know some of either sex who make it a boast how often they have made and unmade this slender tie. It is a dangerous pastime. 'The hand of little use hath the daintier touch,' and they who thus trifle with their affections will end by losing the capacity to feel any real affection at all.

Undoubtedly there occur instances where a woman has pledged herself in all seriousness, and afterwards sees her affianced in a light which warns her that she cannot be happy with him,—that the vows she will be called upon to pronounce at the altar will be hollow and false. What is she to do?

We are not inditing the decrees of the Court of Love. Here is the advice of another to her hand:

> 'First to thine own self be true,
> And then it follows, as the night the day,
> That thou canst ne'er be false to any man.'

CONCERNING LONG ENGAGEMENTS.

They are hurtful, and they are unnecessary. Is love so vagrant that it must be tied by such a chain? Better let it go. True love asks no oath; it casteth out fear, and believes without a promise.

There are other reasons, sound physiological reasons, which we could adduce, if need were, to show that the close personal relations which arise between persons who are engaged should not be continued too long a time. They lead to excitement and debility, sometimes to danger and disease. Especially is this true of nervous, excitable, sympathetic dispositions.

If we are asked to be definite, and give figures, we should say that a period not longer than a year, nor shorter than three months, should intervene between the engagement and the marriage.

THE RIGHT TIME OF YEAR TO MARRY.

Woman, when she marries, enters upon a new life, and a trying one. Every advantage should be in her favour. The season is one of those advantages. Extreme heat and extreme cold both wear severely on the human frame. Mid-winter and mid-summer are, therefore, alike objectionable, especially the latter.

Spring and fall are usually chosen, as statistics show, and the preference is just. On the whole, the spring is rather to be recommended than the autumn. In case of a birth within the year, the child will have attained sufficient age to weather its period of teething more easily ere the next summer.

THE RIGHT TIME IN THE MONTH TO MARRY.

We mean the woman's own month, that which spans the time between her periodical sicknesses, be it two or five weeks. Let her choose a day about equidistant from two periods The reasons for this we shall specify hereafter.

THE WEDDING TOUR.

Custom prescribes a journey immediately after marriage, of a week or a month or two. It is an unwise provision. The event itself is disturbance enough for the system; and to be hurried hither

and thither, stowed in narrow berths and inconvenient carriages, troubled with baggage, and annoyed by the importunities of cabmen, waiters, and hangers-on of every description, is enough, in ordinary times, to test the temper of a saint.

The foundation of many an unhappy future is laid on the wedding tour. Not only is the young wife tried beyond all her experience, and her nervous system harassed, but the husband, too, partakes of her weakness. Many men, who really love the women they marry, are subject to a slight revulsion of feeling for a few days after marriage. 'When the veil falls, and the girdle is loosened,' says the German poet Schiller, 'the fair illusion vanishes.' A half regret crosses their minds for the jolly bachelorhood they have renounced. The mysterious charms which gave their loved one the air of something more than human, disappear in the prosaic sunlight of familiarity.

Let neither be alarmed, nor lose their self-control. Each requires indulgence, and management, from the other; both should demand from themselves patience and self-command. A few weeks, and this danger is over; but a mistake now is the mistake of a lifetime. More than one woman has confessed to us that her unhappiness commenced from her wedding tour; and when we inquired more minutely, we have found that it arose from an ignorance and disregard of just such little precautions as we have been referring to.

Yet it is every way advisable that the young pair should escape the prying eyes of friends and relatives at such a moment. Let them choose some

quiet resort, not too long a journey from home, where they can pass a few weeks in acquiring that more intimate knowledge of each other's character so essential to their future happiness.

THE WIFE.

THE WEDDING NIGHT.

WE now enter upon the consideration of the second great period in the life of Woman. The maiden becomes a Wife. She is born into a new world. She assumes new relationships,—the sweetest, and, at the same time, the most natural of which she is capable.

The great object of the conjugal union is the transmission of life,—a duty necessary in order to repair the constant ravages of death, and thus perpetuate the race. In the fulfilment of this sublime obligation, woman plays the more prominent part, as she is the source and depositary of the future being. It is of moment, therefore, that she should not be altogether ignorant of the nature and responsibilities of her position. Ignorance here means suffering, disease, and sometimes death. Let us then interrogate science in regard to these matters, among the most interesting of all human concerns.

The initiation into marriage, like its full fruition, maternity, is attended with more or less suffering. Much, however, may be done to avert and to lessen the pain which waits upon the first step in this new life. For this purpose, regard must be had to the

selection of the day. We have said that a time about midway between the monthly recurring periods is best fitted for the consummation of marriage. As this is a season of sterility, it recommends itself on this account, in the interest of both the mother and offspring. The first nuptial relations should be fruitless, in order that the indispositions possibly arising from them shall have time to subside before the appearance of the disturbances incident to pregnancy. One profound change should not too quickly succeed the other. About the tenth day after menstruation should therefore be chosen for the marriage ceremony.

It sometimes happens that marriage is consummated with difficulty. To overcome this, care, management, and forbearance should always be employed, and anything like precipitation and violence avoided. Only the consequences of unrestrained impetuosity are to be feared. In those rare cases in which greater resistance is experienced than can be overcome by gentle means, the existence of a condition contrary to nature may be suspected. Violence can then only be productive of injury, and is not without danger. Medical art should be appealed to, as it alone can afford assistance in such an emergency.

Although the first conjugal approaches are ordinarily accompanied by slight flooding, a loss of blood does not always occur. Its absence proves nothing. The appearance of blood was formerly regarded as a test of virginity. The Israelites, Arabs, and others carefully preserved and triumphantly exhibited the evidence of it as an infallible

sign of the virtue of the bride. They were in error. Its presence is as destitute of signification as its absence; for it is now well known that widows, and wives long separated from their husbands, often have a like experience. The temperament is not without its influence. In those of lymphatic temperament, pale blondes, who often suffer from local discharge and weakness, the parts being relaxed, there is less pain and little or no hæmorrhage. In brunettes, who have never had any such troubles, the case is reversed. The use of baths, unguents, etc., by the young wife, however serviceable they might prove, is obviously impracticable. This great change sometimes also produces swelling and inflammation of the glands of the neck.

Marital relations ordinarily continue during the first few weeks to be more or less painful. General constitutional disturbance and disorders of the nervous system often result. These troubles are all increased by the stupid custom of hurrying the bride from place to place, at a time when the bodily quiet and the mental calmness and serenity so desirable to her should be the only objects in view. Too frequent indulgence at this period is a fruitful source of various inflammatory diseases, and often occasions temporary sterility and ill-health. The old custom requiring a three days' separation after the first nuptial approach was a wise one, securing to the young wife the soothing and restoring influence of rest. Nothing was lost by it, and much gained.

In a little while, however, all irritation should subside, and no suffering or distress of any kind,

whether general or local, should attend upon the performance of this important function. The presence of suffering now becomes indicative of disease. Of this we will speak hereafter.

SHALL HUSBAND AND WIFE OCCUPY THE SAME ROOM AND BED?

One third of life is passed in sleep. This period of unconsciousness and rest is necessary for the renewal of vital strength, and upon its proper management depends much of the health not merely of the husband and wife, but of their offspring. A great deal has been written upon the effect on health and happiness of occupying separate apartments, separate beds in the same apartment, or the same bed. This vexed question it is impossible to settle by absolute rules, suitable to all cases. In general, it may be asserted that there are no valid physiological reasons for desiring to change the custom which now prevails in this and most other countries. When both parties are in good health, and of nearly the same age, one bedchamber, if sufficiently roomy, may be used without any disadvantage to either. Such an arrangement is also to be commended, because it secures closer companionship, and thus developes and sustains mutual affection.

It is said that in Zurich, in the olden time, when a quarrelsome couple applied for a divorce, the magistrate refused to listen to them at first. He ordered that they should be shut up together in one room for three days, with one bed, one table, one plate, and one cup. Their food was passed in

by attendants, who neither saw nor spoke to them. On the expiration of the three days, it was usual to find that neither of them wanted a separation.

As before stated, there are conditions under which sleeping together is prejudicial to the health. A certain amount of fresh air during the night is required by every one. Re-breathed air is poisonous. During sleep constant exhalations take place from the lungs and from the skin, which are injurious if absorbed. A room twelve feet square is too small for two persons, unless it is so thoroughly ventilated that there is a constant change of air. In fact, a sleeping apartment for two persons should contain an air-space of at least twenty-four hundred cubic feet, and the facilities for ventilation should be such that the whole amount will be changed in an hour,—that is, at the rate of forty cubic feet per minute; for it has been ascertained that twenty cubic feet of fresh air a minute are required for every healthy adult.

Very young and very old people should never occupy the same bed. When the married couple hold the relation to each other, in regard to age, of grandfather and granddaughter, separate apartments should be insisted upon.

Certain diseases can be produced by sleeping together. The bed of a consumptive, it is well known, is a powerful source of contagion. In Italy it is the custom, after death, to destroy the bed-clothes of consumptive patients. Tubercular disease has, within the past few years, been transferred from men to animals by inoculation. Authentic cases are upon record of young robust girls

of healthy parentage, marrying men affected with consumption, acquiring the disease in a short time, and dying, in some instances, before their husbands. In these significant cases, the sickly emanations have apparently been communicated during sleep. When, therefore, either husband or wife is known to have consumption, it would be highly imprudent for them to pass the long hours of the night either in the same bed or in the same room.

WHAT KIND OF BED IS MOST HEALTHFUL?

Feather-beds are not conducive to the health of either sex. Mattresses made of wool, or of wool and horsehair, are much better. The bed should be opened, and its contents exposed to the air and sunlight, once every year. Beds long saturated with the night exhalations of their occupants are not wholesome. A number of ancient writers have alleged—and it has been reasserted by modern authorities—that sleeping on sponge is of service to those who desire to increase their families. The mattresses of compressed sponge recently introduced, therefore, commend themselves to married people thus situated. Hemlock boughs make a bed which has a well-established reputation for similar virtues.

The odor of cone-bearing trees has a well-known influence upon the fruitfulness of wedlock. Those who live in pine forests have ordinarily large families of children.

Excessive clothing at night is highly injurious. So also is a fire in the bed-room, except in case of sickness. If the body be too much heated during

sleep, perspiration occurs, or the action of the heart is increased, and the whole economy becomes excited. Either condition prevents sound sleep and reinvigoration of the body. Wives in feeble health, and those liable to attacks of flooding, should therefore have a particular regard to the quantity of clothing on their beds.

THE DIGNITY AND PROPRIETY OF THE SEXUAL INSTINCT.

A distinguished medical writer has divided women into three classes in regard to the intensity of the sexual instinct. He asserts that a larger number than is generally supposed have little or no sexual feeling. A second class of women, more numerous than these, but still small as compared with the whole of their sex, are more or less subject to strong passion. Those of the first class can no more form an idea of the strength of the impulse in other women, than the blind can of colors. They therefore often err in their judgments. The third class comprises the vast majority of women, in whom the sexual appetite is as moderate as all other appetites.

It is a false notion, and contrary to nature, that this passion in a woman is a derogation to her sex. The science of physiology indicates most clearly its propriety and dignity. There are wives who plume themselves on their repugnance or their distaste for their conjugal obligations. They speak of their coldness and of the calmness of their senses, as if these were not defects. Excepting those afflicted with vices of conformation, or with dis-

orders of sensibility,—which amount to the same thing,—all wives are called upon to receive and pay the imposts of love; and those who can withdraw themselves from the operation of this mysterious law without suffering and with satisfaction, show themselves by that fact to be incomplete in their organization, and deficient in the special function of their being. There should be no passion for one which is not shared by both. Generation is a duty. The feeling which excites to the preservation of the species is as proper as that which induces the preservation of the individual. Passionate, exclusive, and durable love for a particular individual of the opposite sex, it has been well said, is characteristic of the human race, and is a mark of distinction from other animals. The instinct of reproduction in mankind is thus joined to an affectionate sentiment, which adds to its sweetness and prolongs infinitely its duration.

Many physiologists have assigned to the feelings an important *rôle* in conception, the possibility of which has even been doubted if there be no passion on the side of the woman. Although this extreme view is not tenable in the light of modern research, yet all recent authorities agree that conception is more assured when the two individuals who co-operate in it participate at the same time in the transports of which it is the fruit. It is also without doubt true that the disposition of the woman at that time has much power in the formation of the fœtus, both in modifying its physical constitution and in determining the character and temperament of its mind. The influence, long ago

attributed by Shakspeare to 'a dull, stale, tired bed' in creating a 'tribe of fops,' is not a mere poet's fancy.

In this manner also may be explained the results of prolonged continence upon the offspring, for desires are usually vivid in proportion to the previous period of rest. The father of Montaigne, returning after an absence of thirty-two years, during which he was engaged in the wars of Italy, begot his son, so justly celebrated in French literature. The father of J. J. Rousseau, after a considerable absence in Constantinople, brought to his wife the reward of a long fidelity.

Sexual passion exerts, therefore, a marked influence upon the future being before conception, by the impression made upon the elements which come together to form it. The question now occurs, What effect does its presence and gratification produce upon the parents? We answer, It is a natural and healthful impulse. Its influence is salutary. A marked improvement in the physical condition of delicate women often follows a happy marriage. This sometimes occurs even in those cases where, from the nature of the disorder, the reverse might be expected. The utility of the passions, well directed, has become a maxim in medicine as in morality. And what passion is more important and fervent than that of which we write? The fathers in medicine, and their modern followers, agree in ascribing to the pleasures of love, indulged in with moderation, activity and lightness of the body, vigor and vivacity of the mind.

Music, apart from its immense influence on the nervous system in general, seems sometimes to exercise a special action on the sexual instinct. Science possesses at the present day some facts beyond dispute, which prove the great power of music in this respect.

ON THE INDULGENCE AND THE RESTRAINT OF SEXUAL DESIRE.

The act of generation is a voluntary one. But nature has so placed it under the empire of pleasure, that the voice of discretion is no longer heard, and the will is often led captive. Hence it is well, for hygienic reasons, to consider its laws.

The too frequent repetition of the reproductive act is known to be followed by consequences injurious to the general health. Too rigid continence is not unattended, in many constitutions, with danger, for the victory over passion may be dearly bought. Science recommends the adoption of a wise mean between two extremes equally destructive. By following her counsel, women may escape from the hysterical and other disorders which often wait as well upon excess as upon too great denial of that passion, which claims satisfaction as a natural right.

As men have made laws upon all subjects, we need not be surprised to learn that they have legislated upon this. History informs us that the legislators of ancient times have not failed to occupy themselves with this grave question of conjugal economy. The ordinances of Solon required that the married should acquit themselves of their duties at least three times a month; those of Zoroaster

prescribed once a week. Mohammed ordered that any wife neglected by her husband longer than a week could demand and obtain a divorce. It is not, however, in these, and other enactments which might be quoted, that guidance is to be sought. The principles derived from nature and experience are more valuable than human laws, however venerable; for these too often serve only to reflect the profound ignorance of their makers.

Moderation should here prevail. Health is thus preserved and strengthened, and the gratification doubled. The art of seasoning pleasures in general, consists in being avaricious with them. To abstain from enjoyment, is the philosophy of the sage, the epicurism of reason.

Proper self-denial in the gratification of the wants of physical love is a source of good, not only to the individual practising it, but to the community, as we shall show hereafter. It may be observed for one's own profit only, or for the benefit of another. The latter is in the end more conducive to self-interest than the former. A double advantage is derived therefrom,—gratitude and sympathy returned, and increase of appetite and of power for future enjoyment. Excess of indulgence results in the pain of surfeit and the extinction of affection. Earnest love, satisfying itself with small gratifications, is a more copious source of happiness than that frequently quenched by full gratification.

What, then, is this moderation which both Hygeia and Venus command? Here, again, invariable rules are not possible. Science rarely laws down laws so inflexible as those of the Medes and Persians. She

designates limits. The passage between Scylla and Charybdis is often a wide one. The folly of the ancient statutes which have been referred to, consists mainly in their failure to recognise the diverse influence of age, temperament, seasons, etc.

It almost appears as if there were but one *season* for generation, that in which the sun re-warms and vivifies the earth, trees dress in verdure, and animals respire the soft breath of spring. Then every living thing reanimates itself. The impulse of reproduction is excited. Now, also, its gratification is most beneficial to the individual and to the species. Children conceived in the spring time have greater vitality, are less apt to die during infancy, than those conceived at any other time of the year. The statistics of many thousand cases, recently carefully collated in England, prove this beyond peradventure. It is well known that a late calf, or one born at the end of the summer, is not likely to become a well-developed and healthy animal. This has been attributed to the chilling influence of approaching winter; but it is capable of another and, perhaps, a truer explanation. Nature's impulses, therefore, in the spring of the year are for the good of the race, and may then be more frequently indulged without prejudice to the individual. Summer is the season which agrees the least with the exercise of the generative functions. The autumn months are the most most unfruitful. Then, also, derangements of the economy are readily excited by marital intemperance.

The *temperaments* exert over reproduction, as over all the other functions of the body, a power-

ful influence Love is said to be the ruling passion in the sanguine temperament, as ambition is in the bilious. There is also in some cases a peculiar condition of the nervous system which impels to, or diverts from, sexual indulgence. In some women, even in moderation, it acts as a poison, being followed by headache and prostration, lasting for days.

With advancing years, the fading of sexual desire calls attention to the general law, that animals and plants, when they become old, are dead to reproduction. What in early life is followed by temporary languor, in matured years is succeeded by a train of symptoms much graver and more durable.

Those who are in feeble health, and particularly those who have delicate chests, ought to be sober in the gratification of love. Sexual intercourse has proved mortal after severe hæmorrhages.

All organized beings are powerfully affected by propagation. Animals become depressed and dejected after it. The flower which shines so brilliantly at the moment of its amours, after the consummation of that act, withers and falls. It is wise, therefore, in imparting life, to have a care not to shorten one's own existence Nothing is more certain than that animals and plants lessen the duration of their lives by multiplied sexual enjoyments. The abuse of these pleasures produces lassitude and weakness. Beauty of feature and grace of movement are sacrificed. When the excess is long continued, it occasions spasmodic and convulsive affections, enfeeblement of the senses, particularly that of sight, deprivation of the mental functions, loss of memory,

pulmonary consumption and death. One of the most eminent of living physiologists has asserted that 'devolopment of the individual and the reproduction of the species stand in a reverse ratio to each other,' and that 'the highest degree of bodily vigor is inconsistent with more than a very moderate indulgence in sexual intercourse.'

The general principles we have just enunciated are of great importance in the regulation of the health. They are more suggestive and useful than the precise rules which have from time to time been laid down on this subject.

TIMES WHEN MARITAL RELATIONS SHOULD BE SUSPENDED.

There are times at which marital relations are eminently improper. We are told, 1 Cor. vii. 3, 4, that neither husband nor wife has the power to refuse the conjugal obligation when the debt is demanded. But there are certain legitimate causes for denial by the wife.

A condition of intoxication in the husband is a proper ground for refusal. Fecundation taking place while either parent has been in this state has produced idiots and epileptics. This has happened again and again. The cases on record are so numerous and well-authenticated, as to admit of no doubt in regard to the fatal effect upon the mind of the offspring of conception under such circumstances.

Physical degeneracy is also often a consequence of procreation during the alcoholic intoxication of one or both parents. A peculiar arrest of growth

and development of body and mind takes place, and, in some instances, the unfortunate children, although living to years of manhood, remain permanent infants, just able to stand by the side of a chair, to utter a few simple sounds, and to be amused with childish toys.

During convalescence from a severe sickness, or when there is any local or constitutional disease which would be aggravated by sexual intercourse, it should be abstained from. There is reason for believing that a being procreated at a period of ill-humour, bodily indisposition, or nervous debility, may carry with it, during its whole existence, some small particles of these evils. When there exists any contagious disease, refusals are of course valid, and often a duty to the unborn. Poverty, or the wish to have no more children, can only be exceptionally allowed as a reason for the denial of all conjugal privileges.

The opinion that sexual relations practised during the time of the menses engender children liable to scrofulous disease, is a mere popular prejudice. But there are other and better-founded reasons for continence during these periods.

The question of intercourse during pregnancy and suckling will come up for consideration when speaking of these conditions hereafter.

CONDITIONS WHEN MARITAL RELATIONS ARE PAINFUL.

Nature has not designed that a function of great moment to the human race—one involving its very existence — should be attended with pain. The

presence of pleasure is indicative of health, its absence of disease. But to a woman who has systematically displaced her womb by years of imprudence in conduct or dress, this act, which should be a physiological one, and free from any hurtful tendencies becomes a source of distress and even of illness. The diseases of the womb which sometimes follow matrimony are not to be traced to excessive indulgence in many cases, but to indulgence *to any extent* by those who have altered the natural relation of the parts before marriage. A prominent physician, Prof. T. Gaillard Thomas, of New York, has said that 'upon a woman who has enfeebled her system by habits of indulgence and luxury, pressed her uterus entirely out of its normal place, and who perhaps comes to the nuptial bed with some marked uterine disorder, the result of imprudence at menstrual epochs, sexual intercourse has a *poisonous* influence. The taking of food into the stomach exerts no hurtful influence on the digestive system; but the taking of food by a dyspeptic, who has abused and injured that organ, does so.'

When excessive pain exists, and every attempt occasions nervous trepidation and apprehension, it is absolutely certain that there is some diseased condition present, for which proper advice should be secured at once. Delay in doing so will not remove the necessity for medical interference in the end, while it will assuredly aggravate the trouble. Prompt intelligent aid, on the contrary, is usually followed by the happiest results in such cases.

STERILITY.

Wives who never become mothers are said to be sterile or barren. This condition is frequently a cause of much unhappiness. Fortune may favor the married couple in every other respect, yet if she refuse to accord the boon of even a single heir to heart and home, her smiles will bear the aspect of frowns. It is then of some interest to inquire into the causes of this condition, and how to prevent or remedy their operation.

Dr. Duncan, of Edinburgh, has shown, by elaborate research, that in those wives who are destined to have children, there intervenes, on the average, about seventeen months between the marriage ceremony and the birth of the first child, and that the question whether a woman will be sterile is decided in the first three years of married life. If she have no children in that time, the chances are thirteen to one against her ever having any. In those cases, therefore, in which the first three years of married life are fruitless, it is highly desirable for those wishing a family to ascertain whether or not the barrenness is dependent upon any defective condition capable of relief.

The age of a wife at the time of marriage has much to do with the expectation of children. As the age increases over twenty-five years, the interval between the marriage and the birth of the first child is lengthened. For it has been ascertained that not only are women most fecund from twenty to twenty-four, but that they begin their career of

child-bearing sooner after marriage than their younger or elder sisters. Early marriages (those before the age of twenty) are sometimes more fruitful than late ones (those after twenty-four). The interesting result has further been arrived at in England, that about one in fourteen of all marriages of women between fifteen and nineteen are without offspring; that wives married at ages from twenty to twenty-four inclusive, are almost all fertile; and that after that age the chances of having no children gradually increases with the greater age at the time of marriage.

There are two kinds of sterility which are physiological, natural to all women, — that of young girls before puberty, and that of women who are past the epoch of the cessation of the menses. In some very rare cases, conception takes place after cessation. In one published case, it occurred nine months afterwards, and in another eighteen months. In some very rare cases, also, conception has taken place before the first menstruation.

The older a woman is at the time of her marriage, the longer deferred is the age at which she naturally becomes sterile. She bears children later in life, in order to compensate, as it were, for her late commencement. But although she continues to have children until a more advanced age than the earlier married, yet her actual child-bearing period is shorter. Nature does not entirely make up at the end of life for the time lost from the duties of maternity in early womanhood; for the younger married have really a longer era of fer-

tility than the older, though it terminates at an earlier age.

A wife who, having had children, has ceased for three years to conceive, will probably bear no more, and the probability increases as time elapses. After the first, births take place with an average interval, in those who continue to be fertile, of about twenty months.

Nursing women are generally sterile, above all, during the first months which follow accouchement, because the vital forces are then concentrated on the secretion of the milk. In a majority of instances, when suckling is prolonged to even nineteen or twenty months, pregnancy does not take place at all until after weaning.

Climate has also an influence upon the fertility of marriages. In southern regions more children are born, fewer in northern. The number of children is in inverse proportion to the amount of food in a country and in a season. In Belgium, the higher the price of bread the greater the number of children, and the greater the number of infant deaths.

The seasons exert a power over the increase of population. The spring of the year, as has already been stated, is the most favourable to fecundity. It is not known whether day and night have any effect upon conception

The worldly condition seems to have much to do with the size of a family. Rich and fashionable women have fewer children than their poor and hard-worked neighbours. Wealth and pleasure seem to be often gladly exchanged for the title of mother.

But it is our more particular object now to inquire into the *causes of absolute sterility* in individual cases, rather than to discuss the operation of general laws upon the fertility of the community at large, however inviting such a discussion may be. When marriages are fruitless, the wife is almost always blamed. It is not to be supposed that she is always in fault. Many husbands are absolutely sterile; for it is a mistake to consider that every man must be prolific who is vigorous and enjoys good health. Neither does it follow, because a woman has never given birth to a living child, that she has not conceived. About one marriage in eight is unproductive of living children, and therefore fails to add to the population. The seeds of life have, however, been more extensively sown among women than these figures would seem to indicate. If the life of an infant for a long time after birth is a frail one, before birth its existence is precarious in the extreme. It often perishes soon after conception. A sickness, unusually long and profuse, occurring in a young married woman a few days beyond the regular time, is often the only evidence she will ever have that a life she has communicated has been ended almost as soon as begun. A tendency to miscarriage may therefore be all that stands in the way of a family. This is generally remediable.

It is a well-known fact that frigidity is a frequent cause of barrenness, as well as a barrier to matrimonial happiness. Its removal, so desirable, is in many cases possible by detecting and doing away with the cause. The causes are so various, that their enumeration here would be tedious and

unprofitable, for most of them can only be discovered and remedied by a practical physician who has studied the particular case under consideration. So also in regard to the various displacements and diseases of the womb preventing conception. Proper medical treatment is usually followed by the best results.

While the fact that pleasure is found in the marital relation is a favourable augury for impregnation, it has been long noticed that Messalinas are sterile. It was observed in Paris, that out of one thousand only six bore children in the course of a year, whereas the ordinary proportion in that city for that time is three and a half births for every one hundred of the population.

In some women, nothing seems amiss but too intense passion. Such cases are much more rare than instances of the opposite extreme producing the same effect.

A condition of debility, or the presence of certain special poisons in the blood, may prevent conception, or, what is to all intents the same thing, cause miscarriage Many apparently feeble women have large families. But in numerous instances a tonic and sometimes an alterative constitutional treatment is required before pregnancy will take place. On the contrary, there are well-authenticated cases of women who were stout and barren in opulence becoming thin and prolific in poverty.

The stimulus of novelty to matrimonial intercourse imparted by a short separation of husband and wife, is often salutary in its influence upon fertility.

To show upon what slight constitutional differences infertility often depends, it is merely necessary to allude to the fact, known to every one, that women who have not had children with one husband often have them with another. This condition of physiological incompatibility is evidently not altogether one of the emotional nature, for it is observed in animals, among whom it is by no means rare to find certain males and females who will not breed together, although both are known to be perfectly fruitful with other females and males. The ancients, believing that sterility was more common with couples of the same temperament and condition, advised, with Hippocrates, that blonde women should unite with dark men, thin women with stout men, and *vice versâ*.

Barren women should not despair. They sometimes become fecund after a long lapse of years. In other words, they are sterile only during a certain period of their lives, and then, a change occurring in their temperament with age, they become fruitful. History affords a striking example of this eccentricity of generation, in the birth of Louis XIV., whom Anne of Austria, Queen of France, brought into the world after a sterility of twenty-two years. Catherine de Medicis, wife of Henry II., became the mother of ten children after a sterility of ten years. Dr. Tilt, of London, mentions the case of a woman who was married at eighteen, but although both herself and her husband enjoyed habitual good health, conception did not take place until she was forty-eight, when she bore a child. Another case is reported where a well-formed female

married at nineteen, and did not bear a child until she had reached her fiftieth year.

Families often suffer from the effects of sterility. Civilised nations never do. Recent researches have been carefully instituted in several countries to determine the exact power of the human race to preserve its numbers against the ravages of death. It has been ascertained that during periods of peace the population can be maintained to the same point by the additions made to it through the procreating capacity of only one-half of the women in the community. Nature, therefore, has made ample provision for preventing a decrease of population through failure of reproduction.

She has also instituted laws to prevent its undue increase. It would seem as if the extension of material mental and social comfort and culture has a tendency to render marriage less prolific, and population stationary or nearly so. So evident is this tendency, that it has been laid down as a maxim in sociology by Sismondi, that 'where the number of marriages is proportionally the greatest where the greatest number of persons participate in the duties and the virtues and the happiness of marriage, the smaller number of children does each marriage produce.' Thus, to a certain extent, does nature endorse the opinions of those political economists who assert that increase of population beyond certain limits is an evil happily averted by wars, famines, and pestilences, which hence become national blessings in disguise. She, however, points to the extension of mental and moral education and refinement as gentler and surer means of re-

ducing plethoric population than those suggested by Malthus and Mill.

Many causes of sterility, it will therefore be seen, are beyond the power of man to control. They operate on a large scale for the good of the whole. With these we have little concern. But there are others which may be influenced by intelligent endeavor. Some have been already alluded to, and the remedy suggested; but we will proceed to give more specific

ADVICE TO WIVES WHO DESIRE TO HAVE CHILDREN.

It has long been known that menstruation presents a group of phenomena closely allied to fecundity. The first eruption of the menses is an unequivocal sign of the awakening of the faculty of reproduction. The cessation of the menstrual epochs is a sign equally certain of the loss of the faculty of reproduction. When conception has taken place, the periodical flow is interrupted. Labor occurs at about the time in which the menses would have appeared. In short, it is a fact, now completely established, that the time immediately before, and particularly that after the monthly sickness, is the period the most favorable to fecundation. It is said that, by following the counsel to this effect given him by the celebrated Fernel, Henry II., the King of France, secured to himself offspring after the long sterility of his wife before referred to. Professor Bedford, of New York, says that he can point to more than one instance in which, by this advice, he has succeeded in adding

to the happiness of parties who for years had been vainly hoping for the accomplishment of their wishes.

Repose of the woman, and, above all, sojourn on the bed after the act of generation, also facilitates conception. Hippocrates, the great father of medicine, was aware of this, and laid stress upon it in his advice to sterile wives.

The womb and the breasts are bound together by very strong sympathies: that which excites the one will stimulate the other. Dr. Charles Loudon mentions that four out of seven patients, by acting on this hint, became mothers. A similar idea occurred to the illustrious Marshall Hall, who advised the application of a strong infant to the breast. Fomentations of warm milk to the breasts and the corresponding portion of the spinal column, and the use of the breast-pump two or three times a day, just before the menstrual period, have also been recommended by good medical authorities. Horseback exercise, carried to fatigue, seems occasionally to have conduced to pregnancy.

The greatest hope of success against sterility is to change the dominant state of the constitution. But this can only be effected under suitable medical advice. The treatment of sterility—thanks to the recent researches of Dr. Marion Sims—is much more certain than formerly; and the intelligent physician is now able to ascertain the cause, and point out the remedy, where before all was conjecture and experiment. The sterile wife should, herefore, be slow in abandoning all hope of ever becoming a mother.

ON THE LIMITATION OF OFFSPRING.

No part of our subject is more delicate than this. Very few people are willing to listen to a dispassionate discussion of the propriety or impropriety of limiting within certain bounds the number of children in a family. On the one side are many worthy physicians and pious clergymen, who, without listening to any arguments, condemn every effort to avoid large families; on the other, are numberless wives and husbands, who turn a deaf ear to the warnings of doctors and the thunders of divines, and, eager to escape a responsibility they have assumed, hesitate not to resort to the most dangerous and immoral means to accomplish this end.

We ask both parties to lay aside prejudice and prepossession, and examine with us this most important social question in all its bearings.

Let us first inquire whether there is such a thing as *over-production*—having *too many* children. Unquestionably there is. Its disastrous effects on both mother and children are known to every intelligent physician. Two-thirds of all cases of womb disease, says Dr. Tilt, are traceable to child-bearing in feeble women. Hardly a day passes that a physician in large practice does not see instances of debility and disease resulting from overmuch child-bearing. Even the lower animals illustrate this. Every farmer is aware of the necessity of limiting the offspring of his mares and cows. How much more severe are the injuries inflicted on the delicate organization of woman! A very great mortality,

says Dr. Duncan of Edinburgh, attends upon confinements when they become too frequent.

The evils of a too rapid succession of pregnancies are likewise conspicuous in the children. There is no more frequent cause, says Dr. Hillier,—whose authority in such matters none will dispute,—of rickets than this. Puny, sickly, short-lived offspring follows over-production. Worse than this, the carefully compiled statistics of Scotland show that such children are pecularly liable to idiocy. Adding to an already excessive number, they come to overburden a mother already overwhelmed with progeny They cannot receive at her hands the attention they require. Weakly herself, she brings forth weakly infants. 'Thus,' concludes Dr. Duncan, 'are the accumulated evils of an excessive family manifest.'

Apart from these considerations, there are certain social relations which have been thought by some to advise small families. When either parent suffers from a disease which is transmissible, and wishes to avoid inflicting misery on an unborn generation, it has been urged that they should avoid children. Such diseases not unfrequently manifest themselves after marriage, which is answer enough to the objection that if they did not wish children they should not marry. There are also women to whom pregnancy is a nine months' torture, and others to whom it is nearly certain to prove fatal. Such a condition cannot be discovered before marriage, and therefore cannot be provided against by a single life. Can such women be asked to immolate themselves?

It is strange, says that distinguished writer, John

Stuart Mill, that intemperance in drink, or in any other appetite, should be condemned so readily, but that incontinence in this respect should always meet not only with indulgence but praise. 'Little improvement,' he adds, 'can be expected in morality until the producing too large families is regarded with the same feeling as drunkenness, or any other physical excess.' A well-known medical writer, Dr. Drysdale, in commenting on these words, adds: 'In this error, if error it be, I also humbly share.'

'When dangerous prejudices,' says Sismondi, the learned historian of southern Europe, 'have not become accredited, when our true duties towards those to whom we give life are not obscured in the name of a sacred authority, no married man will have more children than he can bring up properly.'

Such is the language of physicians and statesmen; but a stronger appeal has been made for the sake of morality itself. The detestable crime of *abortion* is appallingly rife in our day; it is abroad in our land to an extent which would have shocked the dissolute women of pagan Rome. Testimony from all quarters, especially from New England, has accumulated within the past few years to sap our faith in the morality and religion of American women. This wholesale, fashionable murder, how are we to stop it? Hundreds of vile men and women in our large cities subsist by this slaughter of the innocents, and flaunt their ill-gotten gains—the price of blood—in our public thoroughfares. Their advertisements are seen in the newspapers; their soul and body destroying means are hawked in every town. With such temptation strewn in her path, what will

the woman threatened with an excessive family do? Will she not yield to evil, and sear her conscience with the repetition of her wickedness? Alas! daily experience in the heart of a great city discloses to us only too frequently the fatal ease of such a course.

In view of the injuries of excessive child-bearing on the one hand, and of this prevalent crime on the other, a man of genius and sympathy, Dr. Raciborski of Paris, took the position that the avoidance of offspring to a certain extent is not only legitimate, but should be recommended as a measure of public good. 'We know how bitterly we shall be attacked,' he says, 'for promulgating this doctrine; but if our ideas only render to society the services we expect of them, we shall have effaced from the list of crimes the one most atrocious without exception, that of child-murder, before or after birth, and we shall have poured a little happiness into the bosoms of despairing families, where poverty is allied to the knowledge that offspring can be born only to prostitution or mendicity. The realization of such hopes will console us under the attacks upon our doctrines.'

It has been eagerly repeated by some, that the wish to limit offspring arises most frequently from an inordinate desire of indulgence. We reply to such, that they do not know the human heart, and that they do it discredit. More frequently the wish springs from a love of children. The parents seek to avoid having more than they can properly nourish and educate. They do not wish to leave their sons and daughters in want. 'This,' says a writer

The Nation (of New York), in an article on this interesting subject,—'this is not the noblest motive of action, of course, but there is something finely human about it.'

'Very much indeed is it to be wished,' says Dr. Edward Reich, after reviewing the multitudinous evils which result to individuals and society from a too rapid increase in families, 'that the function of reproduction be placed under the dominion of the will.'

Men are very ready to find an excuse for self-indulgence; and if they cannot get one anywhere else, they seek it in religion. They tell the woman it is her duty to bear all the children she can. They refer her to the sturdy, strong-limbed women of early times, to the peasant women of northern Europe, who emigrate to America; and ask and expect their wives to rival them in fecundity. Such do not reflect that they have been brought up to light indoor employment, that their organization is more nervous and frail, that they absolutely have not the stamina required for many confinements.

Moreover, they presume too much in asking her to bear them. 'If a woman has a right to decide on any question,' said a genial physician in the Massachusetts Medical Society a few years since, 'it certainly is as to how many children she shall bear.' 'Certainly,' say the editors of a prominent medical journal, 'wives have a right to demand of their husbands at least the same consideration which a breeder extends to his stock.' 'Whenever it becomes unwise that the family should be increased,' says Sismondi again, '*justice* and *humanity* require

that the husband should impose on himself the same restraint which is submitted to by the unmarried.'

An eminent writer on medical statistics, Dr. Henry MacCormac, says: 'The brute yields to the generative impulse when it is experienced. He is troubled by no compunction about the matter. Now, a man ought not to act like a brute. He has reason to guide and control his appetites. Too many, however, forget, and act like brutes instead of as men. It would, in effect, prove very greatly conducive to man's interests were the generative impulses placed absolutely under the sway of right reason, chastity, forecast, and justice.'

There is no lack of authorities, medical and non-medical, on this point. Few who weigh them well will deny that there is such a thing as too large a family; that there does come a time when a mother can rightfully demand rest from her labours, in the interest of herself, her children, and society. When is this time? Here again the impossibility meets us of stating a definite number of children, and saying, 'This many and no more.' As in every other department of medicine, averages are of no avail in guiding individuals. There are women who require no limitation whatever. They can bear healthy children with rapidity, and suffer no ill results. There are others—and they are the majority—who should use temperance in this as in every other function; and there are a few who should bear no children at all. It is absurd for physicians or theologians to insist that it is either the physical or moral duty of the female to have

as many children as she possibly can have. It is time that such an injurious prejudice was discarded, and the truth recognised, that while marriage looks to offspring as its natural sequence, there should be inculcated such a thing as marital continence, and that excess here as elsewhere is repugnant to morality, and is visited by the laws of physiology with certain and severe punishment on parent and child.

Continence, self-control, a willingness to deny himself,—that is what is required from the husband. But a thousand voices reach us from suffering women in all parts of our land that this will not suffice ; that men refuse thus to restrain themselves ; that it leads to a loss of domestic happiness and to illegal amours, or that it is injurious physically and mentally,—that, in short, such advice is useless, because impracticable.

To such sufferers we reply that Nature herself has provided to some extent against over-production, and that it is well to avail ourselves of her provisions. It is well known that women when nursing rarely become pregnant, and for this reason, if for no other, women should nurse their own children, and continue the period until the child is at least a year old. Be it remembered, however, that nursing, continued too long, weakens both mother and child, and, moreover, ceases to accomplish the end for which we now recommend it.

Another provision of nature is, that for a certain period between her monthly illnesses every woman is sterile. The vesicle which matures in her ovaries, and is discharged from them by menstruation, re-

mains some days in the womb before it is passed forth and lost. How long its stay is we do not definitely know, and probably it differs in individuals. From ten to twelve days at most are supposed to elapse after the *cessation* of the flow before the final ejection of the vesicle. For some days after this the female is incapable of reproduction. But for some days *before* her monthly illness she is liable to conception, as for that length of time the male element can survive. This period, therefore, becomes a variable and an undetermined one, and even when known, its observation demands a large amount of self-control.

There is one method widely in use in this country for the limitation of offspring which deserves only the most unqualified condemnation, which is certain to bring upon the perpetrators swift and terrible retribution, and which is opposed to every sentiment of nature and morality. We mean

THE CRIME OF ABORTION.

From the moment of conception a new life commences; a new individual exists; another child is added to the family. The mother who deliberately sets about to destroy this life, either by want of care, or by taking drugs, or using instruments, commits as great a crime, is just as guilty, as if she strangled her new-born infant, or as if she snatched from her own breast her six-months' darling and dashed out its brains against the wall. Its blood is upon her head, and as sure as there is a God and a judgment, that blood will be required of her. The crime she commits is *murder, child-murder,*— the

slaughter of a speechless, helpless being, whom it is her duty, beyond all things else, to cherish and preserve.

This crime is common; it is fearfully prevalent. Hundreds of persons are devoted to its perpetration. It is their trade. In nearly every village its ministers stretch out their bloody hands to lead the weak woman to suffering, remorse, and death. Those who submit to their treatment are not generally unmarried women who have lost their virtue, but the mothers of families, respectable *Christian* matrons, members of churches, and walking in the better classes of society.

We appeal to all such with earnest and with threatening words. If they have no feeling for the fruit of their womb, if maternal sentiment is so callous in their breasts, let them know that such produced abortions are the constant cause of violent and dangerous womb diseases, and frequently of early death; that they bring on mental weakness, and often insanity; that they are the most certain means to destroy domestic happiness which can be adopted. Better, far better, to bear a child every year for twenty years than to resort to such a wicked and injurious step; better to die, if needs be, in the pangs of childbirth, than to live with such a weight of sin on the conscience.

There is no need of either. By the moderation we have mentioned, it is in the power of any woman to avoid the evils of an excessive family, without injury and without criminality.

We feel obliged to speak in plain language of this hidden sin, because so many are ignorant that

it is a sin. Only within a few years have those who take in charge the public morals spoken of it in such terms that this excuse of ignorance is no longer admissible.

Bishop Coxe, of New York, in a pastoral letter, the late Archbishop Spaulding, Catholic Primate of the United States, in an address at the close of a recent Provincial Council at Baltimore, the Old and New School Presbyterian Churches, at a meeting in Philadelphia, have all pronounced the severest judgments against those guilty of antenatal infanticide. Appeals through the press have been made by physicians of high standing, and by eminent divines, which should be in the hands of every one.

The chiefest difficulty hitherto has been, that while women were warned against the evils of abortion, they were offered no escape from the exhaustion and dangers of excessive child-bearing. This difficulty we have fully recognised and fairly met, and, we believe, in such a manner that neither the accuracy of our statements nor the purity of our motives can be doubted. Should our position be attacked, however, the medical man must know that in opposing our views, he opposes those of the most distinguished physicians in Europe and in America; and the theologian should be warned that, when a neglect of physical laws leads to moral evil, the only way to correct this evil is to remedy the neglect. In this case the neglect is over-production; the evil is abortion.

NATURE OF CONCEPTION.

The theories which have been advanced to explain the manner in which the human species is continued and reproduced are very numerous. Including the hypotheses of the ancient philosophers, some two hundred and fifty have been promulgated by the greatest thinkers of all times. The older ones do not deserve mention, as they are replete with absurdities. Such, for instance, is that of Pythagoras, which supposed that a vapor descended from the brain and formed the embryo. The Scythians therefore took blood from the veins behind the ears to produce impotence and sterility. Modern science has shown the total error of this and many other views formerly entertained on this subject. Has galvanism or electricity any share in the mysterious function? Some among the modern physiologists have supposed that there is an electrical or magnetic influence which effects generation. Even within a few months, Dr. Harvey L. Byrd, Professor of Obstetrics in the Medical Department of Washington University of Baltimore, has asserted that he has 'every reason for believing that fecundation or impregnation is always an electrical phenomenon; . . . it results from the completion of an electric circle,—the union of positive and negative electricities.' This, however, is not accepted by all as the dictum of modern science. Physiology has clearly established that the new being is the result of contact between the male element, an independent, living animal, on the one part, and the female element, a matured egg, on the other, involving the

union of the contents of two peculiar cells. Without such contact, fecundation cannot take place.

The only matter of practical moment in connection with this most interesting function which we have to announce, is the influence of the mind on the offspring at the time of generation. This influence has long been remarked in regard to animals as well as men. Jacob was aware of it when he made his shrewd bargain with Laban for 'all the speckled and spotted cattle' as his hire. For we are told that then 'Jacob took him rods of green poplar, and of the hazel and chestnut tree, and pilled white strakes in them, and made the white appear which was in the rods. And he set the rods which he had pilled before the flocks in the gutters in the watering-troughs, when the flocks came to drink, that they should conceive when they came to drink. And the flocks conceived before the rods, and brought forth cattle ringstraked, speckled, and spotted. And Jacob did separate the lambs, and set the faces of the flocks towards the ringstraked and all the brown in the flock of Laban; and he put his own flocks by themselves, and put them not unto Laban's cattle. And it came to pass, whenever the stronger cattle did conceive, that Jacob laid the rods before the eyes of the cattle in the gutters, that they might conceive among the rods. But when the cattle were feeble, he put them not in: so the feebler were Laban's, and the stronger Jacob's.'

The impressions conveyed to the brain through the sense of sight are here asserted by the writer of Genesis to have influenced the system of the ewes so

that they brought forth young marked in the same manner as the rods placed before their eyes. It is not said that there was any miraculous interposition; but the whole account is given as if it were an everyday, natural, and well-known occurrence.

The Greeks, a people renowned for their physical beauty, seemed to be aware of the value of mental impressions; for in their apartments they were lavish of statues and paintings representing the gods and goddesses, delineated in accordance with the best models of art.

Dionysius, tyrant of Syracuse, caused the portrait of the beautiful Jason to be suspended before the nuptial bed, in order to obtain a handsome child.

The following is related of the celebrated Galen:—A Roman magistrate, little, ugly, and hunch-backed, had by his wife a child exactly resembling the statue of Æsop. Frightened at the sight of this little monster, and fearful of becoming the father of a posterity so deformed, he went to consult Galen, the most distinguished physician of his time, who counselled him to place three statues of love around the conjugal bed, one at the foot, the others, one on each side, in order that the eyes of his young spouse might be constantly feasted on these charming figures. The magistrate followed strictly the advice of the physician, and it is recorded that his wife bore him a child surpassing in beauty all his hopes.

The fact that the attributes of the child are determined to an important extent by the bodily and mental condition of the parents at the time of con-

ception, explains the marked difference almost constantly observed between children born to the same parents, however strong the family likeness may be among them. The changes constantly going on in the physical, intellectual, and emotional states of the parents, produce a corresponding alteration in offspring conceived at successive intervals. Twins generally resemble each other very closely in every respect.

Inasmuch, therefore, as the moment of generation is of much more importance than is commonly believed in its effect upon the moral and physical life of the future being, it is to be wished that parents would pay some attention to this subject. It is the moment of creation,—that in which the first vital power is communicated to the new creature. Not without reason has nature associated with it the highest sensual exaltation of our existence. Dr. Hufeland, the author of *The Art of Prolonging Life*, has said, 'In my opinion it is of the utmost importance that this moment should be confined to a period when the sensation of collected powers, ardent passion, and a mind cheerful and free from care, invite to it on both sides.'

SIGNS OF FRUITFUL CONJUNCTION.

There are some women in whom the act of conception is attended with certain sympathetic affections, such as faintness, vertigo, etc., by which they know that it has taken place.

Swelling of the neck was regarded in ancient times as a sign of conception. Its truthfulness has been reaffirmed by modern authorities.

It has also been asserted that impregnation generally excites a universal tremor in all parts of the body, and that it is associated with more than an ordinary degree of pleasure.

It must not be supposed, however, that enjoyment and impregnation bear necessarily to each other the relation of cause and effect, although this is the popular opinion. From too implicit a reliance upon this current belief, wives are often incredulous as to their true condition.

It is a fact that in some cases sickness at the stomach manifests itself almost simultaneously with the act of fecundation. Authentic instances are on record of wives reckoning their confinement nine months from the first feeling of nausea, without ever making a mistake.

In conclusion, it may be said that peculiar sensations are often experienced, frequently of a character difficult to explain; and many modern authors attach to them a marked value. In this manner it is possible for a woman to be satisfied at the moment as to the change which has taken place; yet the evidence is often deceptive, and sometimes nothing peculiar is noticed.

From the period of conception the mother has no direct knowledge of the process that is going on within, excepting by the effects of the increasing pressure upon other parts, until 'quickening' takes place, which belongs to another part of our subject.

The signs and symptoms of pregnancy will be explained in full when we come to treat of the pregnant condition in a future chapter.

HOW TO RETAIN THE AFFECTIONS OF A HUSBAND.

Ah! this is a secret indeed!—worth the wand of the magician, the lamp of Aladdin, or the wishing-cap of the fairy. What could any of these give in exchange for the love of a husband? Yet this pearl of great price, how often is it treated as lightly and carelessly as if it was any bauble of Brummagem!

'My husband,' we have heard young wives say, 'why, it is his duty to love me. Why did he marry me if he is not going to love me, love me fondly love me ever?'

Yes, we all know

Love the gift, is love the debt.

But in this world of ours it is often hard to get one's own; and when got, our care must never cease, lest it be wrested from us. The plant you bought at the greenhouse, and that now blossoms on your window-sill, became yours by purchase, but it has required your daily care to keep it alive and persuade it to unfold its blossoms. Infinitely more delicate is this plant of love. It, too, you purchased. You gave in exchange for it your own heart. It too, you must daily tend with constant solicitude, lest it wither and die.

In this country, some women think that anything is good enough to wear at home. They go about in slatternly morning dresses, unkempt hair, and slippers down at heel. 'Nobody will see me,' they

say, 'but my husband.' Let them learn a lesson from the wives of the Orient.

In those countries a married woman never goes abroad except in long sombre robes and thick veil. An English lady visiting the wife of one of the wealthy merchants, found her always in full dress, with toilet as carefully arranged as if she were going to a ball.

'Why!' exclaimed the visitor, at length, 'is it possible that you take all this trouble to dress for nobody but your husband?'

'Do, then,' asked the lady in reply, 'the wives of Englishmen dress for the sake of pleasing other men?'

The visitor was mute.

Not that we would wish our women to be for ever in full costume at home. That would be alarming. But she who neglects neatness in attire, and, above all, cleanliness of person, runs a great danger of creating a sentiment of disgust in those around her. Nothing is more repugnant to the husband's senses than bad odors, and, for reasons which every woman knows, women who neglect cleanliness are peculiarly liable to them. When simple means do not remove them, recourse should be promptly had to a medical adviser.

So it is with bad breath. This sometimes arises from neglect of the teeth, sometimes from diseases of the stomach, lungs, etc. A man of delicate olfactories is almost forced to hold at arm's length a wife with a fetid breath.

There are some women—we have treated several—who are plagued with a most disagreeable perspi-

ration, especially about the feet, the arms, etc. Such should not marry until this is cured. It is a rule among army surgeons, to be chary about giving men their discharge from military service on surgeon's certificate. But fetid feet are at times so horribly offensive, that they are considered an allowable cause for discharge. No doubt, in some of our States they would be received as a valid ground for divorce!—certainly with quite as much reason as many of the grounds usually alleged.

In short, the judicious employment of all the harmless arts of the toilet, and of those numerous and effective means which modern science offers, to acquire, to preserve, and to embellish beauty, is a duty which woman, whether married or single, should never neglect. With very little trouble, the good looks and freshness of youth can be guarded almost to old age; and, even when hopelessly gone, simple and harmless means are at hand to repair the injuries of years, or at least to conceal them. But this is an art which would require a whole volume to treat of, and which we cannot here touch upon.

INHERITANCE.

We now come to the consideration of a very wonderful subject,—that of inheritance. It is one of absorbing interest, both because of the curious facts it presents, and of the great practical bearing it has upon the welfare of every individual.

In order to the better understanding of this matter, it is necessary at the outset to make a distinction between four kinds or varieties of inheritance. The

most generally recognised is *direct inheritance*,—that in which the children partake of the qualities of the father and mother. But a child may not resemble either parent, while it bears a striking likeness to an uncle or aunt. This constitutes *indirect* inheritance. Again, a child may be more like one of its grandparents than either its father or mother. Or, what is still more astonishing, it may display some of the characteristics possessed only by a remote ancestor. This form of inheritance is known by the scientific term *atavism*, derived from the Latin word *atavus*, meaning an ancestor. It is curious to note in this connection that sometimes a son resembles more closely his maternal than his paternal grandsire in some male attribute,—as a peculiarity of beard, or certain diseases confined to the male sex. Though the mother cannot possess or exhibit such male qualities, she has transmitted them through her blood, from her father to her son.

The fourth variety of inheritance is that in which the child resembles neither parent, but the first husband of its mother. A woman contracting a second marriage, transmits to the offspring of that marriage the peculiarities she has received through the first union. Breeders of stock know this tendency, and prevent their brood-mares, cows, or sheep from running with males of an inferior stock. Thus the diseases of a man may be transmitted to children which are not his own. Even though dead, he continues to exert an influence over the future offspring of his wife, by means of the ineffaceable impress he had made in the conjugal rela-

tion upon her whole system, as we have previously mentioned. The mother finds in the children of her second marriage

> '. . . the touch of a vanished hand,
> And the sound of a voice that is still.'

A child may therefore suffer through the operation of this mysterious and inexorable law, for sins committed not by its own father, but by the first husband of its mother. What a serious matter, then, is that relation between the sexes called marriage! How far-reaching are its responsibilities!

A distinction must here be drawn between hereditary transmission and the possession of qualities at birth, which have not been the result of any impression received from the system of father or mother, but due to mental influences or accidents operating through the mother. A child may be born idiotic or deformed, not because either parent or one of its ancestors was thus affected, but from the influence of some severe mental shock received by the mother during her pregnancy. This subject of maternal impressions will come up for separate consideration in the discussion of pregnancy. Again, a child may be epileptic, although there is no epilepsy in the family, simply because of the intoxication of the father or mother at the time of the intercourse resulting in conception. Such cases are not due to hereditary transmission, for that cannot be hereditary which has been possessed by neither the parents nor any other relatives.

In considering the effects of inheritance, we will first pass in review those connected with the phy-

sical constitution. These are exceedingly common and universally known. Fortunately, not merely are evil qualities inherited, but beauty, health, vigor, and longevity also.

BEAUTY.

Good looks are characteristic of certain families. Alcibiades, the handsomest among the Grecians of his time, descended from ancestors remarkable for their beauty. So well and long has the desirable influence of inheritance in this respect been recognised, that there existed in Crete an ancient law which ordained that each year the most beautiful among the young men and women should be chosen and forced to marry, in order to perpetuate the type of their beauty. Irregularities of feature are transmitted from parent to child through many generations. The aquiline nose has existed some centuries, and is yet hereditary in the Bourbon family. The hereditary under-lip of the House of Hapsburg is another example. When the poet Savage speaks of

'The tenth transmitter of a foolish face,'

he scarcely exaggerates what is often seen in families where some strongly-marked feature or expression is long predominant or reappears in successive generations.

NECK AND LIMBS.

The form and length of the neck and limbs are frequently hereditary, as is also the height of the body. The union of two tall persons engenders

tall children. The father of Frederick the Great secured for himself a regiment of men of gigantic stature, by permitting the marriage of his guards only with women of similar height. A tendency to obesity often appears in generation after generation of a family. Yet such cases are within the reach of medical art.

COMPLEXION.

Even the complexion is not exempt from this influence. Blondes ordinarily procreate blondes, and dark parents have dark-skinned children. An union in marriage of fair and dark complexions results in an intermediate shade in the offspring. Not always, however; for it has been asserted that the complexion chiefly follows that of the father. The offspring of a black father and a white mother is much darker than the progeny of a white father and a dark mother. In explanation of this fact, it has been said that the mother is not impressed by her own color, because she does not look upon herself, while the father's complexion attracts her attention, and thus gives a darker tinge to the offspring. Black hens frequently lay dark eggs; but the reverse is more generally found to be the case.

PHYSICAL QUALITIES TRANSMITTED BY EACH PARENT.

In general, it may be said that there exists a tendency on the part of the father to transmit the external appearance, the configuration of the head and limbs, the peculiarities of the senses, and of the

skin and the muscular condition; while the size of the body, and the general temperament or constitution of the child, are derived from the mother. Among animals, the mule, which is the produce of the male ass and the mare, is essentially a modified ass having the general configuration of its sire, but the rounded trunk and larger size of its dam. On the other hand, the hinny, which is the offspring of the stallion and the she-ass, is essentially a modified horse, having the general configuration of the horse, but being a much smaller animal than its sire, and therefore approaching the dam in size as well as in the comparative narrowness of its trunk. The operation of this principle, though general, is not universal. Exceptions may easily be cited. In almost every large family it will be observed that the likeness to the father predominates in some children, while others most resemble the mother. It is rare to meet with instances in which some distinctive traits of both parents may not be traced in the offspring.

HAIR.

Peculiarities in the colour and structure of the hair are transmitted. Darwin mentions a family in which, for many generations, some of the members had a single lock differently coloured from the rest of the hair

TEMPERAMENT.

The law of inheritance rules in regard to the production of the temperament. The crossing of one temperament with another in marriage, produces a modification in the offspring generally advantageous.

FERTILITY.

A peculiar aptitude for procreation is sometimes hereditary. The children of prolific parents are themselves prolific. It is related that a French peasant woman was confined ten times in fifteen years. Her pregnancies, always multiple, produced twenty-eight children. At her last confinement she had three daughters, who all lived, married, and gave birth to children,—the first to twenty-six, the second to thirty-one, and the third to twenty-seven On the contrary, sometimes a tendency to sterility is found fixed upon certain families, from which they can only escape by the most assiduous care.

LONGEVITY.

In the vegetable kingdom, the oak inherits the power to live many years, while the peach-tree must die in a short time. In the animal kingdom, the robin becomes grey and old at ten years of age; the rook caws lustily until a hundred. The ass is much longer-lived than the horse. The mule illustrates in a striking manner the hereditary tendency of longevity. It has the size of the horse, the long life of the ass. The weaker the ass, the larger, the stronger, and the shorter-lived and more horse-like the mule. It is also a curious and instructive fact, that this animal is the toughest after it has passed the age of the horse: the inherited influence of the horse having been expended, the vitality and hardiness of the ass remain.

It is universally conceded, that longevity is the privileged possession of some lineages. That

famous instance of old age, Thomas Parr, the best authenticated on record, may be mentioned in illustration. It is vouched for by Harvey, the distinguished discoverer of the circulation of the blood. Parr died in the reign of Charles the First, at the age of 152, after having lived under nine sovereigns of England. He left a daughter aged 127. His father had attained to a great age, and his great-grandson died at Cork at the age of 103.

DEFORMITIES.

Deformities are undoubtedly sometimes transmitted to the progeny. It is by no means rare to find that the immediate ancestors of those afflicted with superfluous fingers and toes, club-feet, or hare-lips, were also the subjects of these malformations. There are one or two families in Germany whose members pride themselves upon the possession of an extra thumb; and there is an Arab chieftain whose ancestors have from time immemorial been distinguished by a double thumb upon the right hand. Darwin gives many similar instances. A case of curious displacement of the knee-pans is recorded, in which the father, sister, son, and the son of the half-brother by the same father, had all the same malformation.

PERSONAL PECULIARITIES.

Gait, gestures, voice, general bearing, are all inherited. Peculiar manners, passing into tricks, are often transmitted, as in the case, often quoted, of the father who generally slept on his back with his right leg crossed over the left, and whose daughter, whilst

an infant in the cradle, followed exactly the same habit, though an attempt was made to cure her. Left-handedness is not unfrequently hereditary. It would be very easy to go on multiplying instances, but we forbear.

HOW TO HAVE BEAUTIFUL CHILDREN.

A practical question now naturally suggests itself. How can the vices of conformation be avoided, and beauty secured? The art of having handsome children, known under the name of *callipædia*, has received much attention, more, perhaps, in years gone by than of late. The noted Abbot Quillet wrote a book in Latin on the subject. Many other works, in which astrology plays a prominent part, were written on this art in the sixteenth and seventeenth centuries.

We have already stated that well-formed parents will transmit these qualities to their children, with scarcely an exception. Like begets like. Unfortunately, all parents are not beautiful. Yet all desire beautiful offspring. The body of the child can be influenced by the mind of the parent, particularly of the mother. A mind habitually filled with pleasant fancies and charming images is not without its effect upon the offspring.

The statues of Apollo, Castor and Pollux, Venus, Hebe, and the other gods and goddesses which were so numerous in the gardens and public places in Greece, reproduced themselves in the sons and daughters of the passers-by. We know also that marriages contracted at an age too early or too late, are apt to give imperfectly-developed children. The

crossing of temperaments and of nationalities beautifies the offspring. The custom which has prevailed, in many countries, among the nobility, of purchasing the handsomest girls they could find for their wives, has laid the foundation of a higher type of features among the ruling classes. To obtain this desired end, conception should take place only when both parents are in the best physical condition, at the proper season of the year, and with mutual passion. (We have already hinted how this can be regulated.) During pregnancy the mother should often have some painting or engraving representing cheerful and beautiful figures before her eyes, or often contemplate some graceful statue. She should avoid looking at, or thinking of ugly people, or those marked with disfiguring diseases. She should take every precaution to escape injury, fright, and disease of any kind, especially chicken-pox, erysipelas, or such disorders as leave marks on the person. She should keep herself well nourished, as want of food nearly always injures the child. She should avoid ungraceful positions and awkward attitudes, as by some mysterious sympathy these are impressed on the child she carries. Let her cultivate grace and beauty in herself at such a time, and she will endow her child with them. As anger and irritability leave imprints on the features, she should maintain serenity and calmness.

INHERITANCE OF TALENT AND GENIUS.

The effects of inheritance are perhaps more marked upon the mind than upon the body. This

need not surprise us. If the peculiar form of the brain can be transmitted, the mental attributes, the result of its organization, must necessarily also be transmitted.

It is a matter of daily observation, that parents gifted with bright minds, cultivated by education, generally engender intelligent children; while the offspring of those steeped in ignorance are stupid from birth. It may be objected, that men the most remarkable in ancient or modern times, as Socrates, Plato, Aristotle, Shakspeare, Milton, Buffon, Cuvier, etc., have not transmitted their vast intellectual powers to their progeny. In explanation, it has been stated that what is known as genius is not transmissible. The creation of a man of genius seems to require a special effort of Nature, after which, as if fatigued, she reposes a long time before again making a similar effort. But it may well be doubted whether even these complex mental attributes on which genius and talent depend are not inheritable, particularly when both parents are thus endowed. That distinguished men do not more frequently have distinguished sons, may readily be accounted for when it is recollected that the inherited character is due to the combined influence of both parents. The desirable qualities of the father may therefore be neutralized in the offspring by the opposite or defective qualities of the mother. That contrasts in the disposition of parents are rather the rule than the exception, we have already shown. Every one tends to unite himself in friendship or love with a different character from his own, seeking thereby

to supplement the qualities in which he feels his own nature to be deficient. The mother, therefore, may weaken, and perhaps obliterate, the qualities transmitted by the father. Again, the influence of some remote ancestors may make itself felt upon the offspring through the operation of the law of atavism, before alluded to, and thus prevent the children from equalling their parents in their natural endowments. Notwithstanding the workings of these opposing forces, and others which might be mentioned, we find abundant illustration of the hereditary nature of talent and character.

Of six hundred and five names occurring in a biographical dictionary devoted to men distinguished as great founders and originators, between the years 1453 and 1853, there were, as has been pointed out by Mr. Galton, no less than one hundred and two relationships, or one in six. Walford's *Men of the Time* contains an account of the distinguished men in England, the Continent, and America, then living. Under the letter A there are eighty-five names, and no less than twenty-five of these, or one in three and a half, have relatives also in the list; twelve of them are brothers, and eleven fathers and sons. In Bryan's *Dictionary of Painters*, the letter A contains three hundred and ninety-one names of men, of whom sixty-five are near relatives, or one in six; thirty-three of them are fathers and sons, and thirty are brothers. In Fétis's *Biographie Universelle des Musiciens*, the letter A contains five hundred and fifteen names, of which fifty are near relatives, or one in ten. Confining ourselves to literature alone, it has been found that it is one to

six and a half that a very distinguished literary man has a very distinguished literary relative; and it is one to twenty-eight that the relation is father and son, or brother and brother, respectively. Among the thirty-nine Chancellors of England, sixteen had kinsmen of eminence; thirteen of them had kinsmen of great eminence. These thirteen out of thirty-nine, or one in three, are certainly remarkable instances of the influence of inheritance. A similar examination has been instituted in regard to the judges of the Supreme Court of Massachusetts, and other American States, with like results. The Greek poet Æschylus counted eight poets and four musicians among his ancestors. The greater part of the celebrated sculptors of ancient Greece descended from a family of sculptors. The same is true of the great painters. The sister of Mozart shared the musical talent of her brother. As there are reasons, to be detailed hereafter, for believing that the influence of the mother is even greater than that of the father, how vastly would the offspring be improved if distinguished men united themselves in marriage to distinguished women for generation after generation!

INFLUENCE OF FATHERS OVER DAUGHTERS; OF MOTHERS OVER SONS.

We have already called attention to the parts of the physical organization transmitted by the father and by the mother. It would seem, moreover, that each parent exercises a special influence over the child according to its sex. The father transmits to the daughters the form of the head, the framework

of the chest and of the superior extremities, while the conformation of the lower portion of the body and the inferior extremities is transmitted by the mother. With the sons this is reversed. They derive from the mother the shape of the head and of the superior extremities, and resemble the father in the trunk and inferior extremities. From this it therefore results, that boys procreated by intelligent women will be intelligent, and that girls procreated by fathers of talent will inherit their mental capacity. The mothers of a nation, though unseen and unacknowledged in the halls of legislation, determine in this subtle manner the character of the laws.

History informs us that the greater part of the women who have been celebrated for their intelligence, reflected the genius of their fathers. Arete, the most celebrated woman of her time, on account of the extent of her knowledge, was the daughter of the distinguished philosopher Aristippus, disciple of Socrates. Cornelia, the mother of the Gracchi, was a daughter of Scipio. The daughter of the Roman emperor Caligula was as cruel as her father. Marcus Aurelius inherited the virtues of his mother, and Commodus the vices of his. Charlemagne shut his eyes upon the faults of his daughters, because they recalled his own. Gengis-Khan, the renowned Asiatic conqueror, had for his mother a warlike woman. Tamerlane, the greatest warrior of the fourteenth century, was descended from Gengis-Khan by the female side. Catherine de Medicis was as crafty and deceitful as her father, and more superstitious and cruel. She had two

sons worthy of herself,—Charles IX., who shot the Protestants, and Henry III., who assassinated the Guises. Her daughter, Margaret of Valois, recalled her father by her gentle manners. The cruel deeds of Alexander VI., the dark records of which will for ever stain the pages of history, are only rivalled in atrocity by those of his children, the infamous Borgias. Arete, Hypatia, Madame de Staël, and George Sand,—all four had philosophers for their fathers. The mother of Bernardo Tasso had the gift of poetry. Buffon often speaks of the rich imagination of his mother. The poet Burns, 'Rare Ben Jonson,' Goethe, Walter Scott, Byron, and Lamartine,—all were born of women remarkable for their vivacity and brilliancy of language. Byron, in his journal, attributes his hypochondria to a hereditary taint derived from his mother, who was its victim in its most furious form; and her father 'was strongly suspected of suicide.' He was said to have resembled more his maternal grandfather than any of his father's family. The daughter of Molière was like her father in her wit and humor Beethoven had for a maternal grandmother an excellent musician. The mother of Mozart gave the first lessons to her son. A crowd of composers have descended from John Sebastian Bach, who long stood unrivalled as a performer on the organ, and composer for that instrument. It may be remarked here, that it is almost invariably true that the ability or inability to acquire a knowledge of music is derived from the ancestry. Parents who cannot turn a tune or tell one note from another, bring forth children equally unmoved 'with concord

of sweet sounds.' Examples could easily be adduced at still greater length, illustrating the direct influence of the father over the daughter, and of the mother over the son. Those given will suffice.

INFLUENCE OF EDUCATION OVER INHERITED QUALITIES.

In correcting the evil effects of inheritance on the mind, education plays a very important part. A child born with a tendency to some vice or intellectual trait, may have this tendency entirely overcome, or at least modified, by training. So, also, virtues implanted by nature may be lost during the plastic days of youth, in consequence of bad associations and bad habits.

Education can therefore do much to alter inherited mental and moral qualities. Can it be invoked to prevent the transmission of undesirable traits, and secure the good? Everything that we have at birth is a heritage from our ancestors. Can virtuous habits be transmitted? Can we secure virtues in our children by possessing them ourselves? Science sadly says, through her latest votaries, that we are scarcely more than passive transmitters of a nature we have received, and which we have no power to modify. It is only after exposure during several generations to changed conditions or habits, that any modification in the offspring ensues. The son of an old soldier learns his drill no more quickly than the son of an artisan. We must therefore come to the conclusion with Mr. Galton, that to a great extent our own embryos

have sprung immediately from the embryos whence our parents were developed, and these from the embryos of their parents, and so on for ever. Hence we are still barbarians in our nature. We show it in a thousand ways. Children, who love to dig and play in the dirt, have inherited that instinct from untold generations of ancestors. Our remote forefathers were barbarians, who dug with their nails to get at the roots on which they lived. The delicately-reared child reverts to primeval habits. In like manner, the silk-haired, parlor-nurtured spaniel springs from the caressing arms of its mistress, to revel in the filth of the roadside. It is the breaking out of inherited instinct.

TRANSMISSION OF DISEASE.

Perhaps the most important part of the subject of inheritance, is that which remains for us to consider in relation to the transmission of disease, or of a predisposition to it.

Consumption,—that dread foe of modern life,—is the most frequently encountered of all affections as the result of inherited predisposition. Indeed some of the most eminent physicians have believed it is never produced in any other way. Heart disease, disease of the throat, excessive obesity, affections of the skin, asthma, disorders of the brain and nervous system, gout, rheumatism, and cancer, are all hereditary. A tendency to bleed frequently, profusely and uncontrollably, from trifling wounds, is often met with as a family affection.

The inheritance of diseased conditions is also *influenced by the sex.* A parent may transmit disease

exclusively to children of the same sex, or exclusively to those of the opposite sex. Thus, a horn-like projection on the skin peculiar to the Lambert family was transmitted from the father to his sons and grandsons alone. So mothers have through several generations transmitted to their daughters alone supernumerary fingers, color-blindness, and other deformities and diseases. As a general rule, any disease acquired during the life of either parent, strongly tends to be inherited by the offspring of the same sex rather than the opposite. We have spoken of the apparently reverse tendency in regard to the transmission of genius and talent.

ARE MUTILATIONS INHERITABLE?

How, it may be inquired, is it in regard to the inheritance of parts mutilated and altered by injuries and disease during the life of either parent? In some cases mutilations have been practised for many generations, without any inherited result. Different races of men have knocked out their upper teeth, cut off the joints of their fingers, made immense holes through their ears and nostrils, and deep gashes in various parts of their bodies, and yet there is no reason for supposing that these mutilations have been inherited. The *Comprachicos*, a hideous and strange association of men and women, existed in the seventeenth century, whose business it was to buy children and make of them monsters. Victor Hugo, in a recent work, has graphically told how they took a face and made of it a snout, how they bent down growth, kneaded the physiognomy, distorted the eyes, and in other ways

disfigured 'the human form divine,' in order to make fantastic playthings for the amusement of the noble-born. But history does not state that these deformities were inherited; certainly no race of monsters has resulted. The pits from small-pox are not inherited, though many successive generations must have been thus pitted by that disease before the beneficent discovery of the immortal Jenner. Children born with scars left by pustules have had small-pox in the womb, acquired through the system of the mother. On the other hand, the lower animals, cats, dogs, and horses, which have had their tails and legs artificially altered or injured, have produced offspring with the same condition of parts. A man who had his little finger on the right hand almost cut off, and which in consequence grew crooked, had sons with the same finger on the same hand similarly crooked. The eminent physiologist Dr. Brown-Séquard mentions, that many young guinea-pigs inherited an epileptic tendency from parents which had been subjected to an operation at his hands resulting in the artificial production of fits; while a large number of guinea-pigs bred from animals which had not been operated on were not thus affected. At any rate, it cannot but be admitted that injuries and mutilations which cause disease, are occasionally inherited. But many cases of deformities existing at birth, as hare-lip, are not due to inheritance, although present in the father. They arise from a change effected in the child while in the womb, through an impression made upon the mind of the mother, as will be shown hereafter.

LATE MANIFESTATIONS OF THE EFFECTS OF INHERITANCE.

Not only are diseases inherited which make their appearance at birth, but those which defer their exhibition until a certain period of life corresponding with that at which they showed themselves in the parents. Thus in the Lambert family, before referred to, the porcupine excrescence on the skin began to grow in the father and sons at the same age, namely, about nine weeks after birth. In an extraordinary hairy family, which has been described, children were produced during three generations with hairy ears: in the father, the hair began to grow over his body at six years old; in his daughter somewhat earlier, namely, at one year; and in both generations the milk teeth appeared late in life, the permanent teeth being deficient. Greyness of hair at an unusually early age has been transmitted in some families. So, also, has the premature appearance of baldness.

HOW TO AVOID THE TENDENCY OF INHERITANCE.

These facts suggest the practical consideration, that in those diseases the predisposition to which alone is inherited, and which break out only after a lapse of time, it is often altogether possible to prevent the predisposition being developed into positive disease. Thus, for instance, the inherited tendency to *consumption* remains asleep in the system until about the age of puberty, or later. Therefore, by the use of a diet in which animal food forms a large portion, properly regulated, and

systematic exercise in the open air, the practice of the long inhalations before recommended, warm, comfortable clothing, together with a residence, if practicable, during the changeable and inclement seasons of the year, in an equable climate, we can often entirely arrest the development of the disease. Prevention here is not only better than cure, but often all that is possible. Those in whom the disease has become active, must too often, like those who entered Dante's infernal regions, 'abandon hope.' Let our words of caution therefore be heeded.

When there is reason to believe that an individual possesses an inherent tendency to any disease, it is the duty of the medical adviser to study the constitution of the patient thoroughly, and after such study to recommend those measures of prevention best suited to avert the threatened disorder. Above all, let the physician look closely to the child at the period of life when any grave constitutional inheritable disease attacked the parent. This supervision should be carried into adult years, for there are instances on record of inherited diseases coming on at an advanced age, as in that of a grandfather, father, and son, who all became insane and committed suicide near their fiftieth year. Gout, apoplexy, insanity, chronic disease of the heart, epilepsy, consumption, asthma, and other diseases, are all more or less under the control of preventive measures Some hereditary diseases, such as idiocy and cancer, we are impotent to prevent, in the present state of our knowledge

A singular fact in connection with the transmis-

sion of disease is the readiness with which a whole generation is passed over, the affection appearing in the next. A father or mother with consumption may in some instances have healthy children, but the grandchildren will die of the disease. Nature kindly favors one generation, but only at the expense of the next.

Some diseases require, in addition to the general means of prevention to be found in a strict observance of the laws of health, some special measures in order to effectually ward off their appearance. But the extent of this work will not admit of their discussion. Already, indeed, have we unduly, perhaps, extended our remarks upon inheritance. The interest and importance of the facts must be our justification.

WHY ARE WOMEN REDUNDANT?

It cannot be without interest to look into the relative proportion of men and women now living. It will interest us still more to inquire into the reason why one sex preponderates over the other in numbers. This done, we will answer the question, Is the production of sex at all under the influence of the human will?

The female sex is the more numerous in all thickly populated parts of the world where we have trustworthy statistics. In Austria, England, and Wales, there are nearly one hundred and five women for every one hundred men. In Sweden they are as one hundred and nine to one hundred. In all cities the disproportion is greater than in the country. In London there are one hundred

and thirteen women to every one hundred men; and in the large towns of Sweden they stand as one hundred and sixteen to one hundred.

This is not true, however, of newly-populated regions. The relative difference is reversed in recent and thinly-settled localities. In our Western States, for instance, the number of the men exceeds that of the women. In California they are as three to one; in Nevada as eight to one; in Colorado, twenty to one. In the State of Illinois there were, according to a recent United States census, ninety-three thousand more men than women. In Massachusetts, on the contrary, there are between fifty and sixty thousand more women than men.

The disproportion of men to women in new countries is due to the disinclination of women to emigrate. They are also unfitted for the hardships of pioneer life.

How is this general preponderance in the number of women produced? Is it because there are more girls born than boys? Not at all. The statistics of over fifty-eight millions of persons show that there are one hundred and six living boys born to every one hundred girls. In the state of Rhode Island, for instance, the proportion for three years, from 1853 to 1855, was one thousand and sixty-four boys born to one thousand girls. But now we meet with the wonderful arrangement of nature, that a larger proportional number of male infants die during the first year of their lives than of females. In the second year, the mortality, though less excessive, still remains far greater on the male side It sub-

sequently decreases, and at the age of four or five years is nearly equal for both sexes. In after life, from the age of fifteen to forty, the mortality is something greater among women, but not sufficiently so to make the number of the two sexes equal. The greater tendency of male offspring to die early is seen even before birth, for more male children are still-born than female,—namely, as three to two. For this reason, the term 'the stronger sex,' applied to men, has been regarded by some authors as a misnomer. They are physically weaker in early life, and succumb more readily to noxious influences.

Having thus pointed out that there are more women actually living in the world than men, although a larger number of boys are born than girls, we will consider for a moment some of the laws of nature which determine the number of the sexes. Without giving the figures,—which would make dry reading,—we will state in brief the conclusions derived from many observations, extending over many years and many nationalities. The relative age of the parents has an especial influence upon the sex of the children. Seniority on the father's side gives excess of male offspring. Equality in the parents' age gives a slight preponderance of female offspring. Seniority on the mother's side gives excess of female offspring. This tallies with the fact that in all civilized countries, as has been stated, the proportion of male births is greater than that of females; for, in accordance with the customs of society, the husband is generally older than the wife. A curious instance, in confirmation

of this law, has recently come under our observation. A patient, married for the second time, is ten years older than her husband. She has two children by him, both girls. Singular to relate, her former husband was ten years older than herself, and by him she had four children, of whom three were boys, the fourth (a girl) having a twin brother.

Still, the relative age is not the sole cause which fixes the sex of the child. Its operation is sometimes overruled by conflicting agencies. In some districts of Norway, for example, there has been a constant deficiency in boys, while in others the reverse has been the case. The circumstance is well known, that after great wars, and sometimes epidemics, in which a disproportionate number of men have died, more boys are born than usual. Men who pass a sedentary life, and especially scholars who exhaust their nervous force to a great extent, beget more girls than boys. So, also, a very advanced age on the man's side diminishes the number of males among the offspring. The quantity and the quality of the food; the elevation of the abode; the conditions of temperature; the parents' mode of life, rank, religious belief, frequency of sexual intercourse,—have all been shown to be causes contributing to the disproportion of the sexes, besides the relative ages of the parents.

Some writers have stated that a southerly or warm and humid constitution of the year is most favorable to the birth of female infants, while in cold and dry years most males are produced. This statement has not been supported by trustworthy statistics in regard to the human race, but in respect

of domestic animals the agriculturists of France have long observed that the season has much to do with the sex. When the weather is dry and cold, and the wind northerly, mares, ewes, and heifers produce more males than when the opposite meteorological condition prevails.

The saying among nurses, that 'This is the year for sons or daughters,' is based upon the erroneous supposition that mothers bring forth more male infants in one year than in another.

That, however, which concerns us the most in this connection, is the question:

CAN THE SEXES BE PRODUCED AT WILL?

This question was asked many centuries ago. It was a hard one, and remained without a satisfactory answer until quite recently. Science has at last replied to it with authority. M. Thury, Professor in the Academy of Geneva, has shown how males and females may be produced in accordance with our wishes.

Some families are most anxious for male offspring, others ardently desire daughters. And would it not often be a matter of national concern to control the percentage of sexes in the population? Is it not a 'consummation most devoutly to be wished,' to bring about that Utopian condition when there would be no sighing maids at home, nor want of warriors in the field? The discussion of this subject is therefore important and allowable.

It has been observed that queen-bees lay female eggs first, and male eggs afterwards. So with

hens: the first-laid eggs give female, the last male products. Mares shown the stallion late in their periods, drop horse-colts rather than fillies.

Professor Thury, from the consideration of these and other like facts, formed this law for stock-raisers: 'If you wish to produce females, give the male at the first signs of heat; if you wish males, give him at the end of the heat.' But it is easy to form a theory. How was this law sustained in practice? We have now in our possession the certificate of a Swiss stock-grower, son of the President of the Swiss Agricultural Society, Canton de Vaud, under date of February 1867, which says:

'In the first place, on twenty-two successive occasions I desired to have heifers. My cows were of Schurtz breed, and my bull a pure Durham. I succeeded in these cases. Having bought a pure Durham cow, it was very important for me to have a new bull, to supersede the one I had bought at great expense, without leaving to chance the production of a male. So I followed accordingly the prescription of Professor Thury, and the success has proved once more the truth of the law. I have obtained from my Durham bull six more bulls (Schurtz-Durham cross) for fieldwork; and having chosen cows of the same color and height, I obtained perfect matches of oxen. My herd amounted to forty cows of every age.

'In short, I have made in all twenty-nine experiments after the new method, and in every one I succeeded in the production of what I was looking for -- male and female. I had not one single

failure. All the experiments have been made by myself, without any other person's intervention; consequently, I do declare that I consider as real and certainly perfect the method of Professor Thury.'

A perfectly trustworthy observer communicates to the *Medical and Surgical Reporter* of Philadelphia for May 2, 1868, the results of similar experiments on animals, with like conclusions.

The plan of M. Thury was also tried on the farms of the late Emperor of the French, with, it is asserted, the most unvarying success.

What is the result of the application of this law to the human race? Dr. F. J. W. Packman, of Wimborne, has stated in the *Lancet*, that, 'in the human female, conception in the first half of the time between menstrual periods produces female offspring, and male in the latter. When a female has gone beyond the time she calculated upon, it will generally turn out to be a boy.'

In the Philadelphia *Medical and Surgical Reporter* for February 8, 1868, a respectable physician writes that, in numerous instances that have come under his observation, Professor Thury's theory has proved correct, 'Whenever intercourse has taken place in from two to six days after the cessation of the menses, girls have been produced; and whenever intercourse has taken place in from nine to twelve days after the cessation of the menses, boys have been produced. In every case I have ascertained not only the date at which the mother placed conception, but also the time when the menses ceased, the date of the first and subsequent

intercourse for a month or more after the cessation of the menses,' etc.

Again, a physician writes to the same journal for June 20, 1868, recording the result of his own experience.

A farmer in Louisiana states, in the *Turf, Field, and Farm*, in support of this law, that 'I have already been able in many cases to guess with certainty the sex of a future infant. More than thirty times, among my friends, I have predicted the sex of a child before its birth, and the event proved nearly every time that I was right.'

The wife, therefore, who would wish, as Macbeth desired of his, to

'Bring forth men-children only,'

should avoid exposing herself to conception during the early part of the time between her menstrual periods.

The prediction of the sex of the child before birth can now be with some accuracy made by the intelligent and skilful physician. The method of doing so will be mentioned in treating of pregnancy.

TWIN-BEARING.

As a rule, a woman has one child at a time. Twins, when they occur, are looked upon with disfavor by most people. There is a popular notion that they are apt to be wanting in physical and mental vigor. This opinion is not without foundation. A careful scientific examination of the subject has shown, that of imbeciles and idiots a much

larger proportion is actually found among the twins born than in the general community. In families where twinning is frequent, bodily deformities likewise occur with frequency. Among the relatives of imbeciles and idiots, twin-bearing is common. In fact, the whole history of twin-births is of an exceptional character, indicating imperfect development and feeble organization in the product, and leading us to regard twins in the human species as a departure from the physiological rule, and therefore injurious to all concerned. Monsters born without brains have rarely occurred except among twins.

The birth of twins occurs once in about eighty deliveries. A woman is more apt to have no children than to have more than one at a time. In view of the increased danger to both mother and child, this rarity of a plural birth is fortunate.

WHY ARE TWINS BORN?

What are the causes or favouring circumstances bringing about this abnormal child-bearing? For it is brought about by the operation of laws. It is not an accident. There are no accidents in nature. By some it is supposed to be due to the mother, by some to the father. There are facts in favour of both opinions. Certain women married successively to several men have always had twins, while their husbands with other wives have determined single births. Certain men have presented the same phenomenon. We can scarcely cite an example more astonishing than that of a countryman who was presented to the Empress of Russia

in 1755. He had had two wives. The first had fifty-seven children in twenty-one confinements; the second, thirty-three in thirteen. All the confinements had been quadruple, triple, or double. A case has come under our own observation in which the bearing of twins has seemed to be due to a constitutional cause. The wife has nine children. The first was a single birth, a girl; the others were all twin-births, and boys.

It has been asserted that compound pregnancies are more frequent in certain years than in others. But that which seems to exert the greatest actual influence over the production of twins is the age of the mother. Very extensive statistics have demonstrated that, from the earliest child-bearing period until the age of forty is reached, the fertility of mothers in twins gradually increases. Between the ages of twenty and thirty, fewest wives have twins. The average age of the twin-bearer is older than the general run of bearers. It is well known that by far the greater number of twins are born of elderly women. While three-fifths of all births occur among women under thirty years of age, three-fifths of all the twins are born to those over thirty years of age. Newly-married women are more likely to have twins at the first labour the older they are. The chance that a young wife from fifteen to nineteen shall bear twins is only as one to one hundred and eighty-nine; from thirty-five to thirty-nine the chance is as one to forty-five, —that is, the wives married youngest have fewest twins; and there is an increase as age advances, until forty is reached.

Race seems to have some influence over plural births. They occur relatively oftener among the Irish than among the English.

INFLUENCE OF TWIN-BEARING ON SIZE OF FAMILIES.

Do women bearing twins have in the end larger families than those never having but one at a time? Popular belief would answer this question in the affirmative. Such a reply would also seem to receive support from the fact, well established, that twins are more frequently additions to an already considerable family than they are either the first of a family or additional to a small family. But statistics have not answered this question as yet positively. They seem, however, in favour of the supposition that twin-bearing women have larger families than their neighbors.

Women are more apt to have twins in their first pregnancy than any other, but after the second confinement the bearing of twins increases in frequency with the number of the pregnancy. It becomes, therefore, an indication of an excessive family, and is to be deplored.

MORE THAN TWO CHILDREN AT A BIRTH.

Cases of the birth of more than two children at a time are still less frequently met with than twins. They are scarcely ever encountered, excepting in women who have passed their thirtieth year. Such cases are all more or less unfortunate both for the mother and the children.

THREE AT A BIRTH.

The births of triplets are not exclusively confined to women above thirty years, but in those younger they are so rare as to be great curiosities. Neither are they apt to occur in the first pregnancy. In this respect they differ from twins, who, as has just been said, are peculiarly prone to make their appearance at the first childbirth. Only four cases of treble births occurred among the 36,000 accouchements which have taken place in the Hospice de Maternité of Paris in a determined time. Out of 48,000 cases of labor in the Royal Maternity Charity in London, only three triplets occurred. History informs us that the three Roman brothers, the Horatii, were triplets. They fought and conquered the three Curiatii of Alba (667 B.C.) who were likewise triplets.

As an interesting fact in connection with this subject, we may mention that in the St. Petersburg Midwives' Institute, between 1845-59, there were three women admitted, who, in their fifteenth pregnancies, had triplets, and each had triplets three times in succession. Happily, the fifteenth pregnancy is not reached by most women.

FOUR AT A BIRTH.

Instances of quadruplets are fewer than triplets. But four vigorous infants have been born at one birth.

FIVE AT A BIRTH.

The birth of *five* living children at a time is very exceptional, and is usually fatal to the offspring.

A remarkable case of this kind is reported in a late medical journal. A woman aged thirty, the wife of a laborer, and the mother of six children, was taken in labor about the seventh month of her pregnancy. Five children, and all alive, were given birth to,--three boys and two girls. Four of the children survived an hour, and died within a few moments of each other. The fifth, a female, and the last born, lived six hours, and was so vigorous that, notwithstanding its diminutive size, hopes were entertained of its surviving.

Another case is reported in a recent French medical journal. The woman was forty years old She had had twins once, and single children five times. On her seventh pregnancy, when five months gone, she was as large as women usually are at the end of their full term. At the close of the month she was delivered of five children. They were all born alive, and lived from four to seven minutes. All five children were males, well built and as well developed as fœtuses of five and one-half months usually are in a single birth. The woman made a good recovery. Other cases of five at a birth might be quoted. They are known to medical science as very singular and noteworthy occurrences.

INCREDIBLE NUMBERS.

Some books speak of seven, eight, nine, ten, and more, children at a birth. But these statements are so marvellous, so incredible, and unsupported by proper testimony, that they do not merit any degree of confidence. The climax of such extraor-

dinary assertions is reached, and a good illustration of the credulity of the seventeenth century furnished, by a writer named Goftr. This traveller, in 1630, saw a tablet in a church at Leusdown (Lausdunum), about five miles from the Hague, with an inscription stating that a certain illustrious countess, whose name and family he records, brought forth at one birth, in the fortieth year of her age, in the year 1276, 365 infants. They were all baptized by Guido, the Suffragan. The males were called John, and the females Elizabeth. They all, with their mother, died on the same day, and were buried in the above-mentioned church. This monstrous birth was said to have been caused by the sin of the countess in insulting a poor woman with twins in her arms, who prayed that her insulter might have at one birth the same number of children as there were days in the year. Of course, notwithstanding the story being attested by a tablet in a church, it must be placed among the many other instances of superstition afforded by an ignorant and credulous era.

We may remark, in closing this subject, that fewer plural births come to maturity than pregnancies with single children. Miscarriages are comparatively more frequent in such pregnancies than in ordinary ones.

PREGNANCY.

VENERATION FOR THE PREGNANT.

WE have been considering woman hitherto as maiden and wife. She now approaches the sacred threshold of maternity. She is with child. In no period of her life is she the subject of an interest so profound and general. The young virgin and the new wife have pleased by their grace, spirit, and beauty. The pregnant wife is an object of active benevolence and religious respect. It is interesting to note how, at all times and in all countries, she has been treated with considerate kindness and great deference. She has been made the subject of public veneration, and sometimes even of religious worship. At Athens and at Carthage the murderer escaped from the sword of justice if he sought refuge in the house of a pregnant woman. The Jews allowed her to eat forbidden meats. The laws of Moses pronounced the penalty of death against all those who by bad treatment or any act of violence caused a woman to abort. Lycurgus compared women who died in pregnancy to the brave dead on the field of honour, and accorded to them sepulchral inscriptions. In ancient Rome, where all citizens were obliged to rise and stand during the passage of a magistrate, wives were excused from rendering this mark of respect, for the reason

that the exertion and hurry of the movement might be injurious to them in the state in which they were supposed to be. In the kingdom of Pannonia all enceinte women were in such veneration, that a man meeting one on the road was obliged, under penalty of a fine, to turn back and accompany and protect her to her place of destination. The Catholic Church has in all times exempted pregnant wives from fasts. The Egyptians decreed, and in most Christian countries the law at the present time obtains, that if a woman shall be convicted of an offence the punishment of which is death, the sentence shall not be executed if it be proved that she is pregnant.

SIGNS AND SYMPTOMS OF PREGNANCY.

1. The sign most commonly relied upon is the *cessation of the monthly sickness.* The wife who misses the expected return of her illness, is apt to conclude that conception has taken place. This sign is far from being an infallible one.

It should be borne in mind that young married women sometimes have a slight show for two or three periods after their first impregnation. Ignorance of this fact has very frequently led to a miscalculation of the time of confinement. On the other hand, the menses will sometimes become arrested soon after marriage, and continue so for one or two months, without there existing any pregnancy The temporary disappearance of the monthly sickness in such cases is due to the profound impression made upon the system by the new relations of the individual.

It not unfrequently happens that menstruation continues with regularity during the whole period of pregnancy. Exceptional cases are given by distinguished writers on midwifery, of women menstruating during their pregnancy, and at no other time.

As a general rule, when a healthy wife misses her monthly sickness, she is pregnant. But this symptom, though a strong one, must be supported by others before it can be regarded as establishing anything.

2. *Morning sickness* is a very common, a very early, and, in the opinion of most mothers, a very conclusive symptom of pregnancy. We have already had occasion to remark that it sometimes makes its appearance almost simultaneously with conception. It usually comes on in the first few weeks, and continues until the third or fourth month or until quickening. This symptom is apt to be a troublesome one. Often the vomiting is slight, and immediately followed by relief. But it may produce violent and ineffectual straining for some time. It is, however, not to be called a disease: unless it proceeds to an exhausting degree, it must be looked upon as favorable and salutary. There is an old and true proverb, that 'a sick pregnancy is a safe one.' The absence of nausea and vomiting is a source of danger to the mother and child. Women who habitually fail to experience them, are exceedingly apt to miscarry. In such cases medical skill should be invoked to bring about the return of these symptoms, of such importance to healthful pregnancy.

Morning sickness is therefore a very general,

almost constant, accompaniment of the pregnant condition; and great dependence may be placed upon it as a sign.

3. *Changes in the breasts* are valuable as symptoms. They become larger and firmer, and the seat of a pricking or stinging sensation. The nipples are swollen, prominent, and sometimes sore or painful. The veins beneath the skin appear more conspicuous, and of a deeper blue than ordinary. The peculiar circles of rose-coloured skin which surround the nipples increase in extent, change to a darker color, and become covered with a number of little elevations. Subsequently, numerous mottled patches, or round spots of a whitish hue, scatter themselves over the outer part of this circle.

The time at which these changes make their appearance is variable. They may begin to develope themselves in two or three weeks, oftener not until the second or third month, and in women of a delicate build, sometimes not until the latter end of pregnancy. Occasionally no alteration whatever occurs in the breasts until after confinement, in which cases the secretion of milk is delayed for several days after the birth of the child. In some rare instances the breasts never assume maternal proportions, and the mother is debarred from the pleasure and duty of nursing her own child.

4. *Quickening* is the next symptom we will consider. By this term is meant the arrival of that time when the mother first becomes conscious by the movements of the child of its presence. The ancients thought that then life was imparted to the new being Modern physiology emphatically con-

demns this absurdity. The embryo is as much alive in the very earliest moments of pregnancy as at any future stage of its existence. Let every woman therefore remember that she who produces abortion is equally guilty in the eyes of science and of Heaven, whether the act be committed before or after the period of quickening.

How is quickening produced? Undoubtedly by the movements of the child. So soon as its nervous and muscular systems become sufficiently developed to enable it to move its limbs, the mother, if the movements be sufficiently active, is rendered sensible of her situation. But the muscular contractions may not be strong enough to impart any sensation to the mother. In many cases in which they are too feeble to be noticed by herself, the skilled accoucheur is capable of recognizing them. And the movements of the fœtus may be excited in various ways known to physicians.

Time of quickening. — This symptom usually occurs about the middle of pregnancy, near the eighteenth week. Some women feel the movements of the fœtus as early as the third month of pregnancy, others not till the sixth month. Cases occur in which no movement whatever is felt until the eighth or ninth month, or even not at all. It has been suggested that a fœtus which does not indicate its presence in this way is a kind of 'Lazy Lawrence,' too indolent to move. Certainly, many of both sexes exhibit after birth such indomitable love of repose, that it can readily be supposed they were equally passive in fœtal life.

The non-occurrence of this sign may, however,

be due to the debility of the young child, or to a want of sensibility in the walls of the womb itself.

A woman may be deceived, and suppose she has quickened, when her sensations are to be traced to flatulence of the bowels, or perhaps a dropsical effusion. Many ludicrous instances of self-deception are on record. The historian Hume states that Queen Mary, in her extreme desire to have issue, so confidently asserted that she felt the movements of the child, that public proclamation was made of the interesting event. Despatches were sent to foreign courts; national rejoicings were had; the sex of the child was settled, for everybody was certain it was going to be a male; and Bonner, Bishop of London, made public prayers, saying that Heaven would pledge to make him beautiful, vigorous, and witty. But all those high hopes and eager expectations were destined never to be realized. The future disclosed that the supposed quickening was merely a consequence of disordered health, and commencing dropsy.

Some women possess the power of imitating the movements of a fœtus, by voluntary contraction of the abdominal muscles. A well-known colored woman of Charleston, 'Aunt Betty,' had a great reputation as having 'been pregnant for fifteen years.' She made a good deal of money, by exhibiting to physicians and medical students who were curious, the pretended movements of her unborn child. She was repeatedly presented to the medical classes in the city. No pregnancy existed, as was revealed by a *post-mortem* examination. She imposed upon the credulous by the habit she

had acquired of jerking her muscles at pleasure, and thus closely simulating the movements of an embryo.

5. *Changes in the abdomen.*—In the first two months of pregnancy the abdomen is *less* prominent than usual: it recedes, and presents a flat appearance. The navel is also drawn in and depressed. About the third month a swelling frequently shows itself in the lower part of the abdomen, and then diminishes, thus leading the wife to suppose that she was mistaken in her condition, for she finds herself at the fourth month smaller than at the third. After this, however, there is a gradual increase in the size and hardness of the abdomen. What is of more value, is the peculiar form of the swelling. It is pear-shaped, and is thus distinguished from the swelling of dropsy and other affections. The navel begins to come forward, and finally protrudes. The pouting appearance it then presents is very characteristic.

In this connection it may be remarked that, towards the change of life, childless married women often think they perceive that 'hope deferred' is about to be gratified. An enlargement of the abdomen takes place at this time, from a deposit of fatty matter. The nervous perturbations and the cessation of the menses, which are natural to this period, are looked upon as confirmations of the opinion that pregnancy exists. But the day of generation with them has passed. These symptoms herald the approach of the winter of life, which brings with it death to the reproductive system.

6. *Changes in the skin.*—The alterations occurring in the skin are worth observing. Those women who have a delicate complexion and are naturally pale take a high color, and *vice versâ*. In some cases a considerable quantity of hair appears on those parts of the face occupied by the beard in men; it disappears after labor, and returns on every subsequent pregnancy. Oftentimes the skin becomes loose and wrinkled, giving a haggard, aged air to the face, and spoiling good looks. Women who ordinarily perspire freely, have now a dry, rough skin; whereas those whose skin is not naturally moist, have copious perspiration, which may be of a peculiarly strong odor. Copper-colored or yellow blotches sometimes appear upon the skin, mole spots become darker and larger, and a dark ring developes itself beneath the eyes. The whole appearance is thus in many cases altered. On the other hand, obstinate, long-existing skin affections sometimes take their departure during pregnancy, perhaps never to return. These alterations do not occur in all women, nor in all pregnancies of the same woman.

7. We may now group together a number of less important and less constant signs, such as *depraved appetite, longings for unnatural food, excessive formation of saliva in the mouth, heartburn, loss of appetite* in the first two or three months, succeeded by a voracious desire for food, which sometimes compels the woman to rise at night in order to eat, *toothache, sleepiness, diarrhœa, palpitation of the heart, pain in the right side*, etc. These, when they occur singly, are of little value as evidence.

Among these, that of *depraved appetite* is by far the most important, and may be regarded as quite significant. A married woman in her ordinary health, suddenly feeling this morbid taste for chalk, charcoal, slate pencil, and other unusual articles of food, may look upon it as a strong presumptive evidence of impregnation.

When any or all of this group of symptoms accompany the ceasing to be 'regular,' the morning sickness, the changes in the breasts and the other signs which have been enumerated, the wife may be quite sure that she is pregnant.

8. *Changes in the mind.*—The most wonderful of all the changes which attend pregnancy are those in the nervous system. The woman is rendered more susceptible, more impressible. Her character is transformed. She is no longer pleasant, confiding, gentle, and gay. She becomes hasty, passionate, jealous, and bitter. But in those who are naturally fretful and bad-tempered a change for the better is sometimes observed, so that the members of the household learn from experience to hail with delight the mother's pregnancy as a period when clouds and storms give place to sunshine and quietness. In some rare cases, also, pregnancy confers increased force and elevation to the ideas, and augmented power to the intellect.

As this book is written for women only, we do not mention any of the signs or symptoms of pregnancy which medical men alone can recognize. We will merely state that there are many other signs besides these referred to, of great value to the doctor. One, the sound of the heart of the child,

which the practised ear can detect at about the fifth month, is positive and conclusive.

MISCARRIAGE.

Miscarriage is a fruitful source of disease, and often of danger, to wives. It also causes a frightful waste of human life. Unborn thousands annually die in this manner.

Frequency.—Miscarriage is by no means a rare occurrence. Statistics show that thirty-seven out of one hundred mothers miscarry before they attain the age of thirty years. But this accident is much more apt to occur during the latter than during the first half of the child-bearing period; and therefore it is estimated that ninety out of one hundred of all women who continue in matrimony until the change of life, miscarry.

Influence of age of mother.—A woman who marries at forty is very much disposed to miscarry; whereas, had she married at thirty, she might have borne children when older than forty. As a mother approaches the end of her child-bearing period, it is likely that she will terminate her career of fertility with a premature birth. The last pregnancies are not only most commonly unsuccessful, but there is also reason to believe that the occurrence of idiocy in a child may be associated with the circumstance of its being the last-born of its mother. It has been asserted, in this connection, that men of genius are frequently the first-born. First pregnancies are also fraught with the danger of miscarriage, which occurs more often in them than in others, excepting the latest. A woman is particularly apt to miscarry

with her first child, if she be either exceedingly nervous or full-blooded.

Influence of period of pregnancy.—Miscarriage is most frequent in the earlier months of pregnancy—from the first to the third. It is also very prone to happen about the sixth month. Habit makes itself felt here; for women who have many times experienced this sad accident, encounter it nearly always at the same epoch of their pregnancy.

How early can the child live?—The infant is incapable, as a rule, of an independent existence, if brought into the world before the end of the sixth month. The law of France regards a child born one hundred and eighty days after wedlock as not only capable of living, but as legitimate and worthy of all legal and civil rights. There are many cases mentioned, by the older medical writers, of children born previous to this period living. One of the most curious is that recorded by Van Swieten. The boy Fortunio Liceti was brought into the world before the sixth month, in consequence of a fright his mother had at sea. When born, it is said, he was the size of a hand, and his father placed him in an oven, for the purpose, probably, it has been suggested, of making him *rise*. Although born prematurely, he died late, for we are told that he attained his seventy-ninth year. Professor Gunning S. Bedford of New York records the case of a woman in her fourth confinement, who, before she had completed her sixth month, was delivered of a female infant weighing two pounds nine ounces. The surface of the body was of a scarlet hue. It breathed, and in a short time after birth cried

freely. After being wrapped in soft cotton, well lubricated with warm sweet-oil, it was fed with the mother's milk, by having a few drops at a time put into its mouth. At first it had great difficulty in swallowing, but gradually it succeeded in taking sufficient nourishment, and is now a vigorous, healthy young woman.

Dangers to mother.—Wives are too much in the habit of making light of miscarriages. They are much more frequently followed by disease of the womb than are confinements at full terms. There is a greater amount of injury done to the parts than in natural labor. While after confinement ample time is afforded by a long period of repose for the bruised and lacerated parts to heal, after a miscarriage no such rest is obtained. Menstruation soon returns; conception may quickly follow. Unhappily, there is no custom requiring husband and wife to sleep apart for a month after a miscarriage, as there is after a confinement. Hence, especially if there be any pre-existing uterine disease, or a predisposition thereto, miscarriage is a serious thing.

Causes.—The irritation of hemorrhoids or straining at stool will sometimes provoke an early expulsion of a child. Excessive intercourse by the newly married is a very frequent cause. Bathing in the ocean has been known to produce it. Nursing is exceedingly apt to do so. It has been shown by a distinguished medical writer, that, in a given number of instances, miscarriage occurred in seventeen per cent. of cases in which the woman conceived while nursing, and in only ten per cent. where con-

ception occurred at some other time. A wife, therefore, who suspects herself to be pregnant, should wean her child. The extraction of a tooth, over-exertion and over-excitement, a fall, a blow, any violent emotion, such as anger, sudden and excessive joy, or fright, running, dancing, horse-back exercise, or riding in a badly-built carriage over a rough road, great fatigue, lifting heavy weights, the abuse of purgative medicines, disease or displacement of the womb, small-pox, or a general condition of ill-health, are all fruitful and well-known exciting causes of this unfortunate mishap, in addition to those which have been before mentioned.

Prevention.—The eminent practitioner, Dr. Tilt, says, 'The way to prevent miscarriage is to lead a quiet life, particularly during those days of each successive month when, under other circumstances, the woman would menstruate; and to abstain during those days not only from long walks and parties, but also from sexual intercourse.'

It is especially desirable to avoid a miscarriage in the first pregnancy, for fear that the habit of miscarrying shall then be set up, which it will be very difficult to eradicate. Therefore newly-married women should carefully avoid all causes which are known to induce the premature expulsion of the child. If it should take place in spite of all precautions, extraordinary care should be exercised in the subsequent pregnancy, to prevent its recurrence Professor Bedford of New York has said he has found that an excellent expedient in such cases is, as soon as pregnancy is known to exist, 'to inter-

dict sexual intercourse until after the fifth month; for if the pregnancy pass beyond this period, the chances of miscarriage will be much diminished.'

If the *symptoms of miscarriage*, which may be expressed in the two words *pain* and *flooding*, should make their appearance, the doctor ought at once to be sent for, the wife awaiting his arrival in a recumbent position. He may even then be able to avert the impending danger. At any rate, his services are as necessary, and often even more so, as in a labor at full term.

MOTHER'S MARKS.

It is a popular belief that the imagination of the mother affects the child in the womb. It is asserted that infants are often born with various marks and deformities corresponding in character with objects which had made a vivid impression on the maternal mind during pregnancy. This is a subject of great practical interest. We shall therefore give it the careful attention which it deserves.

We have already discussed the operation of the laws of inheritance. It was then stated that the whole story of maternal influence had not been told —that the mother could communicate qualities she never possessed. The potency of imagination at the time of conception over the child has been mentioned. It is now our design to consider its effects, during the period of pregnancy, upon the physical structure and the mental attributes of the offspring. We shall have occasion hereafter, in speaking of nursing, to illustrate the manner in

which the child may be affected by maternal impressions acting through the mother's milk. What can be more wonderful than this intimate union between the mother and her child? It is only equalled by that mysterious influence of the husband over the wife, by which he so impresses her system that she often comes in time to resemble him both in mental and physical characteristics, and even transmits his peculiarities to her children by a second marriage. Father, mother, and child are one.

We wish here to premise that our remarks will be based upon the conclusions of skilled and scientific observers only, whose position and experience no medical man will question. All the instances to be related are given upon unimpeachable authority. They are not the narrations of ignorant, credulous people; they are all fully vouched for. We record here, as elsewhere, only the sober utterances of science. The great importance and utility of an acquaintance with them will be patent to every intelligent man and woman.

The effect of the mind upon the body is well known. Strong, long-continued mental emotion may induce or cure disease. Heart disease may be produced by a morbid direction of the thoughts to that organ. Warts disappear under the operation of a strong belief in the efficacy of some nonsensical application. In olden time, scrofula, or the 'king's evil,' was cured by the touch of the king. The mind of the patient, of course, accomplished the cure. Under the influence of profound mental emotion, the hair of the beautiful Marie Antoinette

became white in a short time. During the solitary voyage of Madame Condamine down the wild and lonely Amazon, a similar change took place. Many other instances might be adduced; but those given are sufficient to show that strong and persistent mental impressions will exert a mysterious transforming power over the body. These facts will pave the way to the consideration of corresponding effects, through the mother's mind, upon the development of the unborn child, forming a part of herself *in utero*.

Influence of mind of mother on form and color of infant.—There are numerous facts on record which prove that *habitual*, long-continued mental conditions of the mother at an early period of pregnancy, induce deformity or other abnormal development of the infant.

Professor William A. Hammond of New York relates the following striking case, which occurred in his own experience, and which scarcely admits of a doubt as to the influence of the maternal mind over the physical structure of the fœtus.

A lady in the third month of her pregnancy was very much horrified by her husband being brought home one evening with a severe wound of the face, from which the blood was streaming. The shock to her was so great that she fainted, and subsequently had a hysterical attack, during which she was under Dr. Hammond's care. Soon after her recovery she told him that she was afraid her child would be affected in some way, and that even then she could not get rid of the impression the sight of her husband's bloody face had made upon her. In

due time the child, a girl, was born. She had a dark red mark upon the face, corresponding in situation and extent with that which had been upon her father's face. She also proved to be idiotic.

Professor Dalton of New York states that the wife of the janitor of the College of Physicians and Surgeons of that city, during her pregnancy, dreamed that she saw a man who had lost a part of the ear. The dream made a great impression upon her mind, and she mentioned it to her husband. When her child was born, a portion of one ear was deficient, and the organ was exactly like the defective ear she had seen in her dream. When Professor Dalton was lecturing upon the development of the fœtus as affected by the mind of the mother, the janitor called his attention to the foregoing instance. The ear looks exactly as if a portion had been cut off with a sharp knife.

Professor J. Lewis Smith of Bellevue Hospital Medical College, New York, has met with the following cases:—An Irishwoman, of strong emotions and superstitions, was passing along a street, in the first months of her pregnancy, when she was accosted by a beggar, who raised her hand, destitute of thumb and fingers, and in 'God's name' asked for alms. The woman passed on, but, reflecting in whose name money was asked, felt that she had committed a great sin in refusing assistance. She returned to the place where she had met the beggar, and on different days, but never afterwards saw her. Harassed by the thought of her imaginary

sin, so that for weeks, according to her statement, she was distressed by it, she approached her confinement. A female infant was born, otherwise perfect, but lacking the fingers and thumb of one hand. The deformed limb was on the same side, and it seemed to the mother to resemble precisely that of the beggar. In another case which Professor Smith met, a very similar malformation was attributed by the mother of the child to an accident occurring, during the time of her pregnancy, to a near relative, which necessitated amputation. He examined both of these children with defective limbs, and has no doubt of the truthfulness of the parents. In May, 1868, he removed a supernumerary thumb from an infant, whose mother, a baker's wife, gave the following history:—No one of the family, and no ancestor, to her knowledge, presented this deformity. In the early months of her pregnancy she sold bread from the counter, and nearly every day a child with a double thumb came in for a penny roll, presenting the penny between the thumb and the finger. After the third month she left the bakery, but the malformation was so impressed upon her mind, that she was not surprised to see it reproduced in her infant.

In all these cases the impression was produced in the early months of pregnancy; but many have been recorded in which malformations in the infant appeared distinctly traceable to strong mental emotions of the mother only a few months previous to confinement, these impressions having been persistent during the remaining period of the pregnancy, and giving rise to a full expectation on the part of

the mother that the child would be affected in the particular manner which actually occurred. Professor Carpenter, the distinguished physiologist, is personally cognisant of a very striking case of the kind which occurred in the family of a near connection of his own.

All the above instances have been those of the effects of persistent mental emotion. But it is also true that *violent and sudden emotion* in the mother leaves sometimes its impress upon the unborn infant, although it may be quickly forgotten.

It is related on good authority that a lady, who during her pregnancy was struck with the unpleasant view of leeches applied to a relative's foot, gave birth to a child with the mark of a leech coiled up in the act of suction on the intended spot.

Dr. Delacoux of Paris says that, in the month of January 1825, he was called to attend a woman in the village of Batignoles, near Paris, who the evening before had been delivered of a six months' fœtus, horribly deformed. The upper lip was in a confused mass with the jaw and the gums, and the right leg was amputated at the middle, the stump having the form of a cone. The mother of this being, who was a cook, one morning, about the third month of her pregnancy, on entering the house where she was employed, was seized with horror at the sight of a porter with a hare-lip and an amputated leg.

At a meeting of the Society of Physicians at Berlin, in August 1868, Herr Dupré stated that a woman saw, in the first weeks of her third preg-

nancy, a boy with a hare-lip ; and not only was the child she then carried born with a frightful hare-lip, but also three children subsequently. Another one, a woman in the fifth week of pregnancy, saw a sheep wounded, and with its bowels protruding. She was greatly shocked, and did not recover her composure for several days. She was delivered at term of a child, in other respects well developed, but lacking the walls of the abdomen.

Many remarkable instances have been collected of the power of *imagination* over the unborn offspring.

Ambrose Paré, the illustrious French surgeon of the sixteenth century, in one of his treatises devotes a chapter to the subject of 'monsters which take their cause and shape from imagination,' and was evidently a strong believer in this influence.

A black child is generally believed to have been born to Marie Thérèse, the wife of Louis XIV., in consequence of a little negro page in her service having started from a hiding-place and stumbled over her dress early in her pregnancy. This child was educated at the convent of Moret, near Fontainebleau, where she took the veil, and where, till the shock of the Revolution, her portrait was shown.

Examples are given by authors of the force of *desires* in causing deformities in infants, and the formation upon them of fruits, such as apples pears, grapes, and others, which the mother may have longed for.

The following is related upon excellent medical authority :—A woman gave birth to a child with a large cluster of globular tumours growing from the

tongue, and preventing the closure of the mouth, in color, shape, and size exactly resembling our common grapes; and with a red excrescence from the chest, as exactly resembling in figure and appearance a turkey's wattles. On being questioned before the child was shown to her, she answered, that while pregnant she had seen some grapes, longed intensely for them, and constantly thought of them; and that she was also once attacked and much alarmed by a turkey-cock.

Dr. Demangeon of Paris quotes, in his work on the Imagination, the *Journal de Verdun*, as mentioning the case of a child, born at Blois, in the eyes of which the face of a watch was distinctly seen. The image was situated around the pupil, and the figures representing the hours were plainly perceived. The mother had experienced a strong desire to see a watch while she was pregnant with this child.

Professor Dalton says, in his *Human Physiology*, that 'there is now little room for doubt that various deformities and deficiencies of the fœtus, conformably to the popular belief, do really originate in certain cases from nervous impressions, such as disgust, fear, or anger, experienced by the mother.' We will now consider the

Influence of the mind of the mother on the mind of the infant; which subject we have not yet touched upon, having confined ourselves to the influence of the maternal mind over the form and color of the unborn child. It will not be necessary to illustrate at length this branch of our topic. Instances are sufficiently common and well known. Dr Seguin

of New York, in his work on Idiocy, gives several cases in which there was reason to believe that fright, anxiety, or other emotions in the mother, had produced idiocy in the offspring. As he remarks, 'Impressions will sometimes reach the fœtus in its recess, cut off its legs or arms, or inflict large flesh wounds before birth,—inexplicable as well as indisputable facts, from which we surmise that idiocy holds unknown though certain relations to maternal impressions.'

We have given many strong cases and most excellent authority for the doctrine that the *purely mental* influence of the mother may produce bodily and mental changes in the unborn infant. But the child is also affected by *physical impressions* made upon the mother.

Dr. Russegger reports that a woman, who had already borne four healthy children, was, in the seventh month of her pregnancy, bitten in the right calf by a dog. The author saw the wound made by the animal's teeth, which wound consisted of three small triangular depressions, by two of which the skin was only slightly ruffled; a slight appearance of blood was perceptible in the third. The woman was at the moment of the accident somewhat alarmed, but neither then nor afterwards had any fear that her fœtus would be affected by the occurrence. Ten weeks after she was bitten, the woman bore a healthy child, which, however, to the surprise of every person, had three marks corresponding in size and appearance to those caused by the dog's teeth in the mother's leg, and consisting, like those, of one large and two smaller

impressions. The two latter, which were pale, disappeared in five weeks; the larger one had also become less, and was not so deep colored as it was at birth. At the time of writing, the child was four months old.

Dr. S. P. Crawford of Greenville, Tennessee, reports in a recent number of the *Nashville Journal of Medicine*, the following sad case:—A lady, in the last stage of pregnancy, was burned by the explosion of a kerosene-oil can. She lived twelve hours after the accident. The face, legs, arms, and abdomen were badly burned. The movements of the child were felt three or four hours after the accident. A short time before the death of the mother she gave birth to the child at full maturity, but still-born. It bore the mark of the fire corresponding to that of the mother. Its legs, arms, and abdomen were completely blistered, having all the appearance of a recent burn.

These instances of a decided influence exerted upon the body and mind of the child in the womb, by physical and mental impressions made upon the mother, might be doubled or trebled. They are as numerous as they are wonderful. Physiologists of the present day do not hesitate to admit the existence of the influence we have been discussing. Reason also comes to the support of facts, to demonstrate and establish its reality. For, if a sudden and powerful emotion of the mind can so disturb the stomach and heart as to cause vomiting and fainting, is it not probable that it can affect the womb and the impressible being within it? Pregnancy is a function of the woman as much as

digestion or pulsation of the heart; and if the latter are controlled by moral and mental impressions, why should not the former be also?

In what manner does this influence of the maternal mind act?—Through the blood of the mother. Only a very delicate membrane separates the vital fluid of the mother from that of the infant in her womb. There is a constant interchange of the blood in its body with that in hers through this exceedingly thin membrane; and thus all nervous impressions which have produced an alteration of either a temporary or permanent character in the circulating fluid of the mother, are communicated to the child. Since the mother, as has been shown, can transmit through her blood certain characteristics of mind and body not her own,—for instance, a disease peculiar to a male from her father to her son, or the physical and mental traits of her first husband to the children by her second,—it does not seem at all strange that she should through this same medium, her blood, impart other peculiarities which have made a strong impression upon her mind. Anatomy and physiology therefore fully explain and account for this seemingly mysterious influence.

The view here stated, and indorsed by modern science, is one which ought to have great weight with the mother, her relatives and friends. The *practical conclusion* which it suggests is, that as during pregnancy there is unusual susceptibility to mental impressions, and as these impressions may operate on the fragile structure of the unborn being, this tendency should be well considered and

constantly remembered, not only by the woman herself, but by all those who associate or are thrown in contact with her. Upon the care displayed in the management of the corporeal and mental health of the mother during the whole period of pregnancy, the ultimate constitution of the offspring greatly depends. All the surroundings and employments of the pregnant woman should be such as conduce to cheerfulness and equanimity. Above all, she should avoid the presence of disagreeable and unsightly objects. Vivid and unpleasant impressions should be removed as soon as possible by quiet diversion of the mind. All causes of excitement should be carefully guarded against.

In leaving the subject of maternal impressions, we will call attention to the manifest difference in extent and degree between the influence of the father and that of the mother over the offspring. That of the father ceases with impregnation. That of the mother continues during the whole term of pregnancy, and, as we shall shortly see, even during that of nursing.

EDUCATION OF THE CHILD IN THE WOMB.

The outlines drawn by the artist Flaxman are esteemed the most perfect and graceful in existence. From earliest childhood he manifested a delight in drawing. His mother, a woman of refined and artistic tastes, used to relate that for months previous to his birth she spent hours daily studying engravings, and fixing in her memory the most beautiful proportions of the human figure as

portrayed by masters. She was convinced that the genius of her son was the fruit of her own self-culture. What a charming idea is this! What an incentive to those about to become mothers, to cultivate refinement, high thoughts, pure emotions, elevated sentiments! Thus they endow their children with what no after education can give them.

The plastic brain of the fœtus is prompt to receive all impressions. It retains them, and they become the characteristics of the child and the man. Low spirits, violent passions, irritability, frivolity, in the pregnant woman, leave indelible marks on the unborn child. So do their contraries; and thus it becomes of the utmost moment that during this period all that is cheerful, inspiring, and elevating should surround the woman. Such emotions educate the child: they form its disposition, they shape its faculties, they create its mental and intellectual traits. Of all education, this is the most momentous.

CAN A WOMAN BECOME AGAIN PREGNANT DURING PREGNANCY.

Can a woman during pregnancy conceive, and add a second and younger child to that already in the womb?

It is not uncommon in the canine race for a mother to give birth at the same time to dogs of different species, showing conclusively the possibility, in these animals, of one conception closely following another. So a mare has been known to produce within a quarter of an hour, first a horse,

and then a mule. And in the human race cases are on record in which women have had twins, of which the one was white and the other colored, in consequence of intercourse on the same day with men of those two races. Dr. Henry relates that in Brazil a Creole woman, a native, brought into the world at one birth three children of three different colors,—white, brown, and black,—each child exhibiting the features peculiar to the respective races.

In all such instances the two conceptions followed each other very rapidly, the offspring arriving at maturity together, and being born at the same accouchement. But more curious and wonderful examples of second and concurrent pregnancies have been published than these,—as, for instance, those in which a child bearing all the attributes of a fœtus at full term is born two, three, four, and even five, months after the first, which appeared also to have been born at full term. Marie Anne Bigaud, aged thirty-seven, gave birth, April 30, 1748, to a living boy at full term, and on the ensuing September 16, to a living girl, which was recognised, by the size and well-developed condition of its body and limbs, to have been also carried until full term. This fact was observed by Professor Eisenman, and by Leriche, surgeon-major of the military hospital of Strasbourg. It will be noticed that there was an interval of four and a half months between the two accouchements. The first child lived two and a half months, and the second a year. In this instance there was not a double womb, as might perhaps be supposed, for after the

mother's death an examination proved that the uterus was single.

Another case of this kind is the following:—Benoite Franquet of Lyons brought into the world a girl on January 20, 1780, and five months and six days afterwards a second girl, also apparently at term, and well nourished. Two years later these two children were presented, with their certificates of baptism, to two notaries of Lyons, MM. Caillot and Desurgey, in order that the fact might be placed on record and vouched for, because of its value in legal medicine.

The number of the entirely authenticated cases now known of the birth of fully developed children within from two to five months of each other, can leave no doubt as to the possibility of such an occurrence. The only question which remains is in regard to the periods of conception. Are the two children in such cases twins, conceived at the same time, but the growth of the last-born so retarded that it did not arrive at maturity until a number of months after its fellow? or, Has a second conception taken place at an interval of several months after the first? If this latter view be true, then, in the instance of Marie Anne Bigaud, above related, the second child must have been conceived after the first had quickened. Then, also, two children of different ages, the offspring of different fathers, may exist in the womb at the same time. The weight of scientific observation and authority has now established the fact that, in very rare instances, a second conception may take place during pregnancy. It must not be understood as necessarily

following from this statement, that when two children are born at the same time,—one fully developed, and the other small and apparently prematurely born,—the two were conceived at different times. The smaller may have been blighted and its growth hindered by the same causes which bring about such effects in cases of single births of incompletely developed children. A similar supposition may account for the birth of a second child within a month or two after the first, for the first may have been prematurely born, and the second carried to full term. But no such supposition can explain the cases referred to, and others which might be mentioned, in which the interval has been five or six months, each child presenting every indication of perfect maturity. The only explanation possible in such instances, which, as has been said, are well authenticated, although few in number, is, that a second pregnancy has occurred during the first.

The above facts would seem sufficiently wonderful. There are others, however, of the same nature still more so. In some instances, the product of the second conception, instead of developing independently of the first, has become attached to it, and the phenomenon has been presented of the growth of a child within a child—a fœtus within a fœtus. Such a singular occurrence has been lately recorded in a German journal. A correspondent of the *Dantzic Gazette* states that on Sunday, February 1, 1869, at Schliewen, near Dirschau, 'a young and blooming shepherd's wife was delivered of a girl, otherwise sound, but having on the lower

part of her back, between the hips, a swelling as big as two good-sized fists, through the walls of which a well-developed fœtus may be felt. Its limbs indicate a growth of from five to six months, and its movements are very lively. The father called in the health commissioner, Dr. Preuss, from Dirschau, and begged him to remove the swelling together with the fœtus. The doctor, however, after a careful examination, declared that there was a possibility in this extraordinary case of the child within the swelling coming to fruition. Its existence and active motions were palpable to all present. No physician could be justified in destroying this marvellous being. It ought rather to be protected and cherished. The new-born girl, notwithstanding her strange burden, is of unusual strength and beauty, and takes the breast very cheerfully.'

We find something further in regard to this singular birth in the *Weser Zeitung* of February 20, 1869. It quotes from the *Dantzic Gazette* some remarks by the health commissioner, Dr Preuss of Dirschau, in which the doctor declares the facts contained in the report given above to be correct. He was summoned on the 1st of February to the child, and saw the vigorous movements, and felt the members of a fœtus within the swelling, as described. It was evidently a double creation. The case thus far, though rare, is not unique. 'But what is novel, and hitherto perfectly unnoticed in medical literature, is the fact that not only the girl, which has been carried its full term, is alive to-day, but the fœtus within the swelling has also,

in the eleven days after birth, further developed, and palpably increased in size. The swelling is now four and a half inches long, three and a half inches wide, and high and pear-shaped; the head lies underneath on the left, the body towards the right.'

Further particulars and the latest intelligence we have concerning the progress of this case are to the effect that the child was brought by special request before the Natural History Society of Dantzic, and thence the mother went to Berlin for medical advice.

MORAL ASPECTS OF THIS QUESTION.

Upon proper judgment and discrimination in the application of the facts we have just been dwelling upon, may depend a wife's honor, and the happiness of the dearest social relations. We will suppose an example. A husband, immediately after the impregnation of his wife, is obliged to quit her, and remains absent a year. In the meanwhile she gives birth to two children, at an interval of a number of weeks. The question will then come up, Whether, under such circumstances, it is possible for her to do so consistently with conjugal purity.

It will be recollected that, in speaking of twins, we remarked that it was not very uncommon for an interval of days or weeks to elapse between the births, and it has just been stated that impregnation during pregnancy is extremely rare. The presumption, therefore, in the case supposed, is as very many to one that the two births were the

result of a twin pregnancy. In the absence of any other evidence against the wife's chastity, it should not even be called in question. This decision receives the support of the maxim in law that a reasonable doubt is the property of the accused, and of the Christian principle that it is better that ninety-nine guilty should escape than that one innocent should be condemned. Hence the teachings of science and of human and divine law all coincide to protect the sacred rights and the precious interests at stake against an unjust suspicion, which even the doctrine of chances would render untenable.

CAN A CHILD CRY IN THE WOMB?

There are some cases, recorded on undoubted authority, in which the child has been heard to cry while in the womb. These are very exceptional. Under ordinary circumstances, it is impossible for the child either to breathe or cry, because of the absence of air. It is only when the bag of membranes has been torn, and the mouth of the child is applied at or near the neck of the uterus, that this can take place. The infant is not unfrequently heard to cry just before birth, after labor has commenced, but before the extrusion of the head from the womb, in consequence of the penetration of air into the uterine cavity.

IS IT A SON OR DAUGHTER?

It is a common saying among nurses, that there is a difference in the size and form of the pregnant woman, according to the sex she carries. This

may well be doubted. Neither is it true that one sex is more active in its 'movements' than the other. It is quite possible, however, for a wife to know the sex of the fœtus, if she can tell about what time in her month conception took place. If it occurred directly after a monthly sickness, the child is a girl; if directly before, it is a boy. When a woman is 'out' in her reckoning, and goes beyond the period of her expected confinement, it will ordinarily turn out to be a boy. The skilful doctor can, in the later months of pregnancy, settle the question of sex in some cases. The beats of the fœtal heart are more frequent in females than in males. The average frequency of pulsations of twenty-eight female fœtuses has been found to be one hundred and forty-four in the minute, the lowest figure being one hundred and thirty-eight; of twenty-two male fœtuses, one hundred and twenty, the lowest figure being one hundred and twelve. Therefore, when the pulsations of the heart of the child in the womb are counted,—as can easily be done by a practised medical ear during the last months of pregnancy,—and are found to be over one hundred and thirty in a minute, it is a daughter; if under one hundred and thirty, a son. In this manner, the sex of an unborn child can be predicted with tolerable accuracy, excepting only when illness of the fœtus has deranged the action of its heart.

ARE THERE TWINS PRESENT?

Certain signs lead to the suspicion of twins, such as being unusually large, and the fact that the in-

crease in size has been more than ordinarily rapid. Sometimes also the abdomen is divided into two distinct portions by a perpendicular fissure. In other cases the movements of a child can be felt on each side at the same time. And in twin pregnancies the morning sickness is apt to be more distressing, and all the other discomforts incident to this condition increased. But these signs and symptoms, when present in any given case, are not conclusive, for they may be noticed when there is only one child. The doctor has one characteristic and infallible sign by which he can ascertain whether the woman be pregnant with twins. It is furnished to him again by the art of listening,—or auscultation, as it is technically called,—the same that, as we have already seen, may enable him to determine the sex of the child. When the beatings of two fœtal hearts are heard on opposite portions of the abdomen, the nature of the pregnancy is apparent.

LENGTH OF PREGNANCY.

What is the ordinary duration of pregnancy? Almost every woman considers herself competent to make the answer—nine months. She may be surprised to learn, however, that such an answer is wanting in scientific precision. It is too indefinite, and is erroneous. There is a great difference between the calendar and the lunar month. Each lunar month having twenty-eight days, the period of nine lunar months is two hundred and fifty-two days. Nine calendar months, including February, represent, on the contrary, two hundred and

seventy-three days. Now the average duration of pregnancy is two hundred and eighty days, that is, forty weeks, or ten lunar months.

While most extended observations have shown that as a general rule, forty weeks, or two hundred and eighty days, is the true period of pregnancy, are we justified in the conclusion that this is its invariable duration? This important question, upon the answer to which so often depend the honor of families, the rights of individuals, and sometimes the interests of nationalities, has been in all times the subject of careful research by physicians, philosophers, and legislators. On the one side, have been those who contend that the laws of nature are invariable, and that the term of pregnancy is fixed and immutable. On the other side, have been those who assert that the epoch of accouchement can be greatly advanced or retarded by various causes, some of which are known, and others not yet appreciated. Abundant and satisfactory testimony has proved that the prolongation of pregnancy beyond the ordinary period of two hundred and eighty days, or forty weeks, is possible. Nor is this contrary to what is observed in regard to other functions of the human body. There is no process depending upon the laws of life which is absolutely invariable either as to the period of its appearance or duration. It is known, as we have already pointed out, that puberty may be advanced or retarded; the time at which the change of life occurs in women, as we shall have occasion hereafter to show, is also subject to variation; and it is a matter of common observation with mothers, that the period of teeth-

ing is sometimes strangely hurried or delayed. A certain degree of variability, therefore, being frequently observed, and entirely compatible with health, in the various other natural processes, why should that of pregnancy form an exception, and be invariably fixed in its duration? And observation upon the lower animals affords most convincing evidence that nature is not controlled by any uniform law in reference to the length of pregnancy. In the cow, the usual period of whose pregnancy is the same as in the human female, instances of calving six weeks beyond the ordinary term are not at all uncommon.

As an illustration of the great interest sometimes attaching to the inquiry under discussion, we may cite the celebrated Gardner Peerage Case, tried by the House of Lords in 1825. Allen Legge Gardner petitioned to have his name inscribed as a peer on the Parliament Roll. He was the son of Lord Gardner by his second wife. There was another claimant for the peerage, however,—Henry Fenton Iadis,—on the ground, as alleged, that he was the son of Lord Gardner by his first and subsequently divorced wife. Medical and moral evidence was adduced to establish that the latter was illegitimate. Lady Gardner, the mother of the alleged illegitimate child, parted from her husband on the 30th of January, 1802, he going to the West Indies, and not again seeing his wife until the 11th of July following. The child whose legitimacy was called in question was born on the 8th of December of that year. The plain medical query therefore arose, Whether this child born either three hundred

and eleven days after intercourse (from January 30th to December 8th), or one hundred and fifty days (from July 11th to December 8th), could be the son of Lord Gardner. As there was no pretence that there was a premature birth, the child having been well developed when born, the conception must have dated from January 30th. The medical question was therefore narrowed down to this: Was the alleged protracted pregnancy (three hundred and eleven days) consistent with experience? Sixteen of the principal obstetric practitioners of Great Britain were examined on this point. Eleven concurred in the opinion that natural pregnancy might be protracted to a period which would cover the birth of the alleged illegitimate child. Because, however, of the moral evidence alone, which proved the adulterous intercourse of Lady Gardner with a Mr. Iadis, the House decided that the title should descend to the son of the second Lady Gardner.

There is on record one fact, well observed, which establishes beyond cavil the possibility of the protraction of pregnancy beyond two hundred and eighty days, or forty weeks. The case is reported by the learned Dr. Desormeaux of Paris, and occurred under his own notice in the Hôpital de Maternité of that city. A woman, the mother of three children, became insane. Her physician thought that a new pregnancy might re-establish her intellectual faculties. Her husband consented to enter on the register of the hospital each visit he was allowed to make her, which took place only every three months. So soon as evidence of pregnancy showed itself, the visits were discontinued

The woman was confined two hundred and ninety days after conception.

The late distinguished Professor Charles D. Meigs of Philadelphia published a case, which he deems entirely trustworthy, of the prolongation of pregnancy to four hundred and twenty days, or sixty weeks. Dr. Atlee reports two cases, which nearly equalled three hundred and fifty-six days each. Professor Simpson of Edinburgh records, as having occurred in his own practice, cases in which the period reached three hundred and thirty-six, three hundred and thirty-two, three hundred and twenty-four, and three hundred and nineteen days. In the Dublin *Quarterly Journal of Medical Science* a case of protracted pregnancy is related by Dr. Joynt. The evidence is positive that the minimum duration must have been three hundred and seventeen days, or about six weeks more than the average. Dr. Elsässer found, in one hundred and sixty cases of pregnancy, eleven protracted to periods varying from three hundred to three hundred and eighteen days.

In treating of the subject of miscarriage, we mentioned instances, recorded by physicians of skill and probity, proving beyond a shade of doubt that a woman may give birth to a living child long before the expiration of the forty weeks. The Presbytery of Edinburgh, Scotland, some time since decided in favor of the legitimacy of an infant born alive, within twenty-five weeks after marriage, to the Rev. Fergus Jardine.

One of the most enlightened countries in Europe has, in view of the facts in reference to the extreme

the 'count' may be relied upon with confidence, and only fails, by a few days, in those exceptional cases in which conception takes place just before the monthly period, or during the menstrual flow

CARE OF HEALTH DURING PREGNANCY.

This subject, the proper management of the health from conception to childbirth, is worthy of careful consideration. The condition of pregnancy, though not one of disease, calls for peculiar solicitude, lest it should lead to some affection in the mother or in the child. For it ought to be remembered that the welfare of a new being is now in the balance. The woman has no longer an independent existence. She has entered upon the circle of her maternal duties. She became a mother when she conceived. The child, though unborn, lives within her; its life is a part of her own, and so frail, that any indiscretion on her part may destroy it. The danger to the child is not imaginary, as the large number of miscarriages and still-births proves.

All mothers desire to have healthy, well-formed, intelligent children. How few conduct themselves in such a manner as to secure a happy development of their offspring! Puny, deformed, and feeble-minded infants are daily ushered into the world because of a want of knowledge, or a sinful neglect of those special measures imperatively demanded in the ordering of the daily life, by the changed state of the system consequent upon pregnancy. We shall therefore point out those laws which cannot be infringed with impunity, and indicate the diet, exercise, dress, and, in general, the conduct

most favorable to the mother and child during this critical period, in which the wife occupies, as it were, an intermediate state between health and sickness.

FOOD.

The nourishment taken during pregnancy should be abundant, but not, in the early months, larger in quantity than usual. Excess in eating or drinking ought to be most carefully avoided. The food is to be taken at shorter intervals than is common, and it should be plain, simple, and nutritious. Fatty articles, the coarser vegetables, highly salted and sweet food, if found to disagree, as is often the case, should be abstained from. The flesh of young animals — as lamb, veal, chicken, and fresh fish—is wholesome, and generally agrees with the stomach. Ripe fruits are beneficial. The diet should be varied as much as possible from day to day. The craving which some women have in the night or early morning may be relieved by a biscuit, a little milk, or a cup of coffee. When taken a few hours before rising, this will generally be retained, and prove very grateful, even though the morning sickness be troublesome. Any food or medicine that will confine or derange the bowels is to be forbidden. The taste is, as a rule, a safe guide, and it may be reasonably indulged. But inordinate, capricious desires for improper, noxious articles, should of course, be opposed. Such longings, however, are not often experienced by those properly brought up. It is a curious fact, that the modification in

the digestive system during pregnancy is sometimes so great that substances ordinarily the most indigestible are eaten, without any inconvenience, and even with benefit, while the most healthful articles become hurtful, and act like poison.

As pregnancy advances, particularly after the sixth month, a larger amount of food, and that of a more substantial character, will be required. The number of meals in the day should then be increased, rather than the quantity taken at each meal.

CLOTHING.

The dress during pregnancy should be loose and comfortable, nowhere pressing tightly or unequally. The word *enceinte*, by which a pregnant woman is designated, meant, originally, without a cincture,—that is, unbound. The Roman matrons, so soon as they conceived, were obliged to remove their girdles. Lycurgus caused the enactment of the Spartan law, that pregnant women should wear large dresses, so as not to prejudice the free development of the precious charges of which nature had rendered them the momentary depositaries. Stays or corsets may be used, in a proper manner, during the first five or six months of pregnancy, but after that they should either be laid aside, or worn very loosely. Any attempt at concealing pregnancy, by tight lacing and the application of a stronger busk, cannot be too severely condemned. By this false delicacy the mother is subjected to great suffering, and the child placed in jeopardy. The shape of the stays should be moulded to that of the changing figure, and great care should be

taken that they do not depress the nipple or irritate the enlarging breasts.

The amount of clothing should be suited to the season, but rather increased than diminished, owing to the great susceptibility of the system to the vicissitudes of the weather. It is especially important that flannel drawers should be worn during advanced pregnancy, as the loose dress favors the admission of cold air to the unprotected parts of the body. A neglect of this precaution sometimes leads to the establishment of the painful disease known as rheumatism of the womb.

Pressure upon the lower limbs, in the neighborhood of the knee or the ankle joint, should be avoided, more particularly towards the last months. It is apt to produce enlargement and knotting of the veins, swelling and ulcers of the legs, by which many women are crippled during their pregnancies, and sometimes through life. Therefore the garters should not be tightly drawn, and gaiters should not be too closely fitted, while yet they should firmly support the ankle.

EXERCISE.

Moderate exercise in the open air is proper and conducive to health during the whole period of pregnancy. It should never be so active nor so prolonged as to induce fatigue. Walking is the best form of exercise. Riding in a badly-constructed carriage, or over a rough road, or upon horseback, as well as running, dancing, and the lifting or carrying of heavy weights, should be scrupulously avoided, as liable to cause rupture, severe flooding,

and miscarriage. During the early months, in particular, extraordinarily long walks and dancing ought not to be indulged in. Journeys are not to be taken while in the pregnant state. Railway travelling is decidedly objectionable. The vibratory motion of the cars is apt to produce headache, sickness at the stomach, faintness, and premature labor. All these precautions are especially to be observed in the first pregnancy.

We must not be understood as condemning exercise and fresh air. They are of the greatest importance to mother and child. But the amount of exercise should be regulated by the dictates of common sense and the woman's own sensations If she can only walk a short distance each day with comfort, let that suffice. She should not force herself to go to a certain place nor to promenade during a certain time in the twenty-four hours. So soon as fatigue is felt, the walk should cease. Let the walks be frequent and short, rather than few and long. They should also be made as pleasant as possible, by companionship and surroundings that will occupy the feelings and imagination in an agreeable manner with new and cheerful impressions. A tendency to indolence is to be combated. A gently active life is best calculated to preserve the health of the mother and her unborn child. But with even the most robust a moderation of the ordinary pursuits and avocations is called for. The nervous and delicate cannot make with safety their customary daily exertions in the performance of their household or social duties and pleasures.

Towards the end of pregnancy the wife should

economize her forces. She should not remain long standing or kneeling, nor sing in either of these postures.

BATHING.

Those who have not been accustomed to bathing should not begin the practice during pregnancy, and in any case great care should be exercised during the latter months. It is better to preserve cleanliness by sponging with tepid water than by entire baths. Foot-baths are always dangerous. Sea-bathing sometimes causes miscarriage, but sea air and the sponging of the body with salt water are beneficial. The shower-bath is of course too great a shock to the system, and a very warm bath is too relaxing. In some women of a nervous temperament, a lukewarm bath taken occasionally at night during pregnancy has a calming influence. This is especially the case in the first and last month. But women of a lymphatic temperament and of a relaxed habit of body are always injured by the bath.

VENTILATION.

We have spoken of the benefits of outdoor air during pregnancy. Attention should also be directed to keeping the atmosphere in the sitting and sleeping rooms of the house fresh. This can only be accomplished by constantly changing it. The doors and windows of every room, while unoccupied, should be kept thrown open in the summer-time, and opened sufficiently often in the winter to wash out the apartments several times a day with fresh air. The extremes of heat and cold

are to be, with equal care, avoided. The house should be kept light. Young plants will not grow well in the dark. Neither will the young child nor its mother flourish without sunlight. The ancients were so well aware of this, that they constructed on the top of each house a solarium, or solar air-bath, where they basked daily, in thin attire, in the direct rays of the sun.

SLEEP.

During pregnancy a large amount of sleep is required. It has a sedative influence upon the disturbed nervous system of the mother. It favors, by the calmness of all the functions which attends it, the growth of the fœtus. Neither the pursuit of pleasure in the evening, nor the observance of any trite maxims in regard to early rising in the morning, should be allowed to curtail the hours devoted to slumber. Pregnant women have an instinctive desire to lie abed late, which, like the other promptings of nature during this period, should not be disregarded. At least eight hours out of the twenty-four can be profitably spent in bed. No night-watching ought ever to be undertaken during pregnancy.

Feather beds should be avoided. The heat which they maintain about the body is inconvenient and dangerous, predisposing to flooding and exhausting perspirations. The hair or sponge mattress is to be preferred. The bed-clothing should not be too heavy. Blankets are to be employed rather than coverlids, as they are lighter and more permeable to perspiration. The mattress and cover should be well aired during the day. The sleeping room

should be capacious and well ventilated, and no curtains permitted about the bed.

Occasional rest is also necessary in the day-time. A nap of an hour or two upon a sofa or lounge will then prove very refreshing. In the earlier months of pregnancy it will tend to prevent miscarriage, and in the latter months to relieve the distress consequent upon the increased size of the womb. It is not unusual, as the close of pregnancy approaches, for a feeling of suffocation to ensue when the woman attempts to lie down. This may be overcome by supporting the back and shoulders with cushions and pillows. Or a bed-chair may be employed. This, if well constructed and covered, will often be found very grateful at night, in the last few weeks of pregnancy.

THE MIND.

A tranquil mind is of the first importance to the pregnant woman. Gloomy forebodings should not be encouraged. Pregnancy and labor are not, we repeat, diseased conditions. They are healthful processes, and should be looked upon as such by every woman. Bad labors are very infrequent. It is as foolish to dread them, as it is for the railway traveller to give way to misgivings in regard to his safety. Instead of desponding, science bids the woman to look forward with cheerfulness and hope to the joys of maternity.

The bad effects of fear upon the mother's mind are illustrated by Plutarch, who, in his Life of Publicola, mentions that, 'at a time when a superstitious fear overran the city of Rome, all the

women then pregnant brought forth imperfect children, and were prematurely delivered.' But we have already spoken, in treating of mothers' marks, of the influence of mental emotions over the unborn child, and the necessity of avoiding their exciting causes.

Because of their deleterious tendency, severe study as well as arduous and protracted manual labor ought to be avoided. The nervous systems of many women are also injuriously affected during pregnancy by perfumes, which at other times are agreeable and innocuous. It is therefore prudent not only to exclude all offensive scents, but also to abstain from the strong odors of various strong perfumes, eau-de-cologne, and of flowers. Large bouquets often cause feelings of faintness, and sometimes temporary loss of consciousness. The extreme liability of the nervous system of the pregnant woman to be affected injuriously to herself and child by scenes of suffering or distress, and by disgusting or frightful objects, cannot be too strongly impressed upon every one. She should be protected from all that will disturb her, and should be constantly treated with soothing and encouraging kindness. Her manifestations of irritability, her caprices, her melancholy anticipations, are not to be scoffed at, but combated with a mixture of reasoning and patient forbearance. On her part, she should endeavour to co-operate with those around her, in sedulously shunning all injurious influences, and in banishing as quickly as possible all improper longings. She should remember that, although she herself may escape mischief from them, her child

may suffer. She is the custodian of interests dearer to her than her own.

RELATION OF HUSBAND AND WIFE DURING PREGNANCY.

During those days when the wife, if she were not pregnant, would have been 'unwell,' marital intercourse should be abstained from. It is then injurious to the mother, and dangerous to the life of the child, as it is liable to excite miscarriage. But if this habitual epoch of the monthly sickness be avoided, there is no reason why passion should not be gratified in moderation and with caution during the whole period of pregnancy. There is one exception to be made to this general course of conduct. In those cases in which a miscarriage has occurred in the first pregnancy, every precaution should be employed—for reasons which have been dwelt upon in a previous article—to prevent its happening again after the second conception. Under such exceptional circumstances, therefore, the husband and wife should sleep apart during the first five months of pregnancy. After that period their ordinary relations may be resumed. When a miscarriage has taken place, intercourse should not be permitted within a month of the accident. The observance of this direction is of the utmost importance. Its neglect is the frequent cause of severe and intractable diseases of the womb.

EFFECT OF PREGNANCY ON HEALTH.

We have had occasion to remark that pregnancy is not a condition of disease. It is not only an

evidence of health, but during its continuance it confers increased physical vigor. As a rule, a woman enjoys *better health* during her pregnancy than at any other time; she is less liable to contagious and other maladies; she is less apt to die than at any other period of her life; and her general constitution seems also then to receive a favorable impress, for wives and mothers live longer than celibates. It is wisely decreed that when woman is engaged in this, to her, anxious stage of reproduction, she shall not be exposed to the pains and dangers of disease, and that those great covenants of nature—marriage and child-bearing—shall be rewarded by added strength and length of days.

There are certain disorders incident, in exceptional cases, to pregnancy, of which we shall shortly speak. In general, however, we repeat that this condition is one of extraordinary health. More than this, in numerous instances it exerts an ameliorating influence upon pre-existing diseases, suspending their march, or bringing about a decidedly curative effect. Thus, various obstinate chronic affections of the skin, of the womb and ovaries, and of the brain and nervous system, frequently get well during pregnancy; and it is well known to every physician, that by the judicious management of this state, and of the lying-in period, troublesome displacements of the womb may be arrested.

It should nevertheless ever be recollected that the condition of pregnancy is one of excitement and enhanced susceptibility to impressions of all kinds. For this reason a change in the habits of

life is necessary; and the importance of the directions laid down for the care of the health during this period, cannot be too strongly insisted upon.

The diseases to which the wife is exposed during pregnancy will be treated of in the chapter on "Health in Marriage."

CONFINEMENT.

PREPARATIONS FOR CHILD-BIRTH

CERTAIN foolish preparations are sometimes made by wives, with the best intentions. Perhaps one of the most common and absurd of these is the local use of sweet oil, in order to facilitate the dilatation of the parts, for which purpose it is perfectly inert. There are, however, some wise and even necessary precautions which every wife should know and employ, to guard against unpleasant and dangerous complications in child-birth.

In particular, *the condition of the breasts* towards the close of pregnancy demands attention. Scarcely any pain in the lying-in chamber is greater or more difficult to bear than that which the young mother suffers from excoriated nipples. This troublesome and often very intractable affection is nearly always the consequence of the want of care previous to confinement. During the latter part of pregnancy the nipples sometimes become sunken or flat, being retracted as the breasts increase in size, because of the want of elasticity on the part of the milk tubes. In order to remedy this fault, we have known a breast-pump or puppy to be applied. Such treatment is dangerous, as it may excite premature contraction of the womb, and miscarriage

Nipple-shields, with broad bases and openings, should always be obtained. They are safe, and effectually secure the prominence of the nipples, when worn constantly, day and night, during the last month or so of pregnancy. Wives who have never had children ought to take special care to ascertain before labor whether this depressed condition of the nipples exists, and to correct it in the manner indicated.

In the first pregnancy it is also important to *harden the nipples.* This may be done by occasionally gently rubbing them between the thumb and finger, and by bathing them twice a day during the last six weeks with tincture of myrrh, or with a mixture of equal parts of brandy and water, to which a little alum has been added. This procedure will render the surfaces less sensitive to the friction of the child's mouth, and thus avert the distress so often occasioned in the first confinement by tenderness of the nipples.

If the nipples be rough or nodulated in appearance, like a strawberry or a raspberry, they are more apt to become excoriated or fissured than if they present a smooth surface. Under such circumstances, make a solution of the sulphate of zinc, of the strength of one grain to the ounce of rose water, in a wide-mouthed bottle, then tilt the bottle upon the nipple, and allow it to remain there for a few minutes several times a day. Simple tenderness of the nipples and slight fissures may be averted by the application either of a lotion of borax (two scruples of borax in three ounces of water, and an ounce of glycerine), of the honey of

borax, or of the tincture of catechu, and by protecting the parts from the pressure of the stays and the friction of the flannel vest.

It is of the greatest moment to the comfort of the mother, that all affections of the nipples should be prevented or remedied before labor; for the treatment of sore nipples when the child is at the breast is often unsatisfactory, while the suffering they occasion is very great, even sometimes giving rise to mammary abscess.

There are certain *articles of clothing* and *dressings for the bed* which should be cared for in advance, in order that they may be ready when required.

The mother should be provided with short-gowns, to be worn over the chemise instead of the ordinary night-gowns. It is of consequence to procure a proper *bandage*. It should be made of heavy muslin, neither too coarse nor too fine; an ordinarily good quality of unbleached muslin is the best. The material is to be cut bias, about one and a quarter yard in length, and from twelve to eighteen inches in breadth, varying, of course, with the size of the person. It should be just large enough to encircle the body after confinement, with a margin of a couple of inches, and to extend down below the fulness of the hips. The measurement should be taken, and the bandage made to it, when four and a half months advanced. It should be narrow above, wider below, and gored in such a manner that it will be a little narrower at the lower extremity than a few inches above, so as to prevent it, when adjusted, from sliding upwards. A bandage constructed in this manner will be very

comfortable; and is not apt to become displaced, after application, as is invariably the case when a towel or a straight piece of muslin is used. The way in which it is to be applied will be detailed hereafter.

The *child's clothing* should consist first of a piece of flannel or some woollen material for a binder. This should be from four to six inches in width, and from twelve to sixteen inches in length; that is to say, wide enough to extend from the arm-pits to the lower part of the abdomen, and long enough to go once and a half times around the child, having the double fold to come over the abdomen. There should be no embroidery about this. A shirt, which it is desirable should be woollen, is to be provided to place over the binder. It should be made to come up tolerably high in the neck, and to extend down the arm. Neither it nor any other portion of the child's clothing should be starched The petticoat, which may be open its whole length behind, is to be put over the shirt; two may be used—a short and a long one. Next comes the child's ordinary frock or slip, and above this an apron to protect the dress from the frequent discharges from the stomach. Then a shawl, of flannel or any other warm material, is to be provided, to throw over the shoulders if the weather be cold. Socks, and pieces of old soft linen, free from stiffening, for napkins or diapers, complete the child's outfit.

For the *permanent and temporary dressing of the bed* there should be provided a piece of impervious cloth (oiled silk is the neatest) about a yard

square; a piece of ordinary table oil-cloth or rubber-cloth; a number of old sheets and comfortables, and a piece of thick carpet. The manner in which these are to be used will be explained shortly.

A pair of small rounded scissors; a package of large pins, one and a half inches in length, for the bandage of the mother, and smaller ones for that of the child; some good linen bobbin for the doctor to tie the navel-string; good toilet soap and fine surgical sponge for washing the child; a piece of soft linen or muslin for dressing the navel; a box of unirritating powder; and a pile of towels,—should all be had and laid aside many weeks before they are wanted. These, together with the material for dressing the bed, the child's clothing, and the mother's bandage, ought to be placed together in a basket got for the purpose, in order that they may all be easily and certainly found at a time when perhaps the hurry and excitement of the moment would render it difficult otherwise to collect them all immediately.

SIGNS OF APPROACHING LABOR.

One of the earliest of the preliminary signs of the coming on of confinement occurs about two weeks before that event. It is a dropping or subsidence of the womb. The summit of that organ then descends, in most cases, from above to below the umbilicus, and the abdomen becomes smaller. The stomach and lungs are relieved from pressure, the woman breathes more freely, the sense of oppression which troubled her previously is lost, and

she says she feels 'very comfortable.' This sensation of lightness and buoyancy increases, and a few days before the setting in of labor she feels so much better that she thinks she will take an extra amount of exercise. The mother of a number of children is acquainted with this sign, but the wife with her first child may exert herself unduly in the house or out-doors, and induce labor when in the street or away from home. Hence the importance of a knowledge of this premonitory symptom.

A second precursory sign of labor is found in the increased fulness of the external parts, and an augmented mucous secretion, which may amount even to a discharge resembling whites, and requiring the wearing of a napkin. This symptom is a good one, indicating a disposition to relaxation, and promising an easy time.

The third preliminary sign which we shall mention, is the change in the mental state of the pregnant woman. She has a feeling of anxiety and of fidgetiness, sometimes accompanied with depression of spirits. This condition of emotional distress, modified in particular cases by reason, self-control, and religion, may continue for several days, perhaps, when

THE SYMPTOMS OF ACTUAL LABOR

make their appearance. The first of these is generally the 'show.' It is the discharge of the plug of mucus which has occupied the neck of the womb up to this time, and is ordinarily accompanied by a little blood. Perhaps before this, or perhaps not for some hours after, the 'pains' will develope them-

selves. These recur periodically, at intervals of an hour or half an hour at the outset, and are 'grinding' in character. *True* labor pains are distinguished from *false* by the fact that they are felt in the back, passing on to the thighs, while false pains are referred to the abdomen; by their intermittent character, the spurious pains being more or less continuous; and by the steady increase in their frequency and severity. In case of doubt as to their exact nature, the doctor should be summoned, who will be able to determine positively whether labor has begun.

The other symptoms which point to the actual commencement of labor are a frequent desire to empty the bowels and bladder, nausea and vomiting, which, in the early part of confinement, is a good sign; shiverings, unattended with any sensation of cold; and, finally, the rupture and discharge of the contents of the 'bag of waters.'

Before passing on to the consideration of the management of the confinement into which the wife has now entered, a few words may be appropriately said upon the

CAUSE OF LABOR.

Neither the size nor the vigor of the child has any influence in bringing about delivery at full term. The ancient theory—which received the support of the distinguished naturalist Buffon—that the infant was the active agent in causing its own expulsion, is an exploded one. It was asserted by some that hunger excited the fœtus to struggle to free itself from the womb; others were disposed to attribute

its efforts to accomplish its entrance into the world, to the need of respiration which it experienced. But all these ingenious theories, which presupposed the embryo to be actuated by the same feelings which would influence a grown person if shut up in such a confined abode, are unsatisfactory, and not tenable. It is well known that the child may die in the womb, without retarding or interfering in any way with the coming on of the process of labor. This fact alone shows that the fœtus is, or at any rate may be, absolutely passive either in regard to the induction or advancement of delivery. The determining cause of labor is seated in the womb itself. The contractions of this organ occasion the 'pains' and expel the child, assisted by the muscles of the abdomen and the diaphragm. That the assistance of the latter forces is not necessary, is conclusively proved by the occurrence of childbirth after the decease of the mother. For instance, a case is on record in which labor commenced and twins were born after the mother had been dead for three days.

CARE DURING LABOR.

We will suppose labor to have commenced. The *preparation of the bed* for the occupancy of the mother is now to be attended to. As she is to lie on the *left side* of the bed, this is the side, and the only one, which is to be dressed for the occasion. In order to do so, remove the outer bed-clothes one at a time, folding them neatly on the right side of the bed so that they can easily be drawn over when desired. The *permanent dressing* is to be placed

beneath the lower sheet and upon the mattress. A soft impervious cloth—which, in speaking of the preparation for confinement, we directed to be procured—is placed next to the surface of the bed. The upper edge should be nearly as high as the margin of the bolster, and it should extend down to a distance at least a foot below the level of the hips, so as to certainly protect the bed from the discharges. Upon the top of this a blanket or sheet is laid, and the whole fastened by pins. The lower sheet of the bed, which had been turned over to the right side, to permit the application of the dressing, is now to be replaced. Over the position of this permanent dressing, on the top of the bed-sheet, a neatly-folded sheet, with the folded edge down, is adjusted and pinned in its place. It is upon this sheet that the patient is to be drawn up after her confinement, which will take place upon the *temporary dressing* of the bed now to be arranged. It consists of an oil-cloth, which should extend up beyond the lower edge of the permanent dressing, overlapping the folded sheet which has been placed above it, and should fall over the side and bottom of the bed. A comfortable or any soft absorbent material is placed over this impervious cloth and covered with a folded sheet, completing the temporary dressing. The bed-clothes may now be adjusted, concealing the dressings from view until they are wanted. The valances at the foot of the bed should be raised, and a piece of carpet placed on the floor. The bed should have no foot-board, or a very low one.

The dress of the mother.—Either a folded sheet

should be adjusted around the waist as the only skirt, so as not to interfere with the walking, or a second chemise should be put on, with the arms outside the sleeves, to extend from the waist to the feet. Then the chemise next the body should be drawn up and folded high up around the breast. It should be plaited neatly along the back, and brought forward and fastened by pins. This should be thoroughly done, so that the linen may not be found wet nor soiled when it is drawn down after confinement. A wrapper or dressing-gown may be worn during the first stage of labor, before it is necessary to go to bed. When, however, that time comes, the wife will take her place on her left side on the temporary dressing, with a sheet thrown over her, her head on a pillow so situated that her body will be bent well forward, and her feet against the bed-post. A sheet should be twisted into a cord and fastened to the foot of the bed, for her to seize with her hands during the accession of the 'bearing-down pains.' Care should be taken to have a number of napkins, a pot of fresh lard, and the basket containing the scissors, ligature, bandage, etc.—which have been previously enumerated in the remarks on preparations for childbirth—at hand, for the use of the doctor.

We have now noted all that it is useful for the wife to know in regard to the preparation for and management of confinement, when a physician is in attendance, as, for obvious reasons, he should always be. In some instances, however, the absence of the doctor is unavoidable, or the labor is completed before his arrival. As a guide to the

performance of the necessary duties of the lying-in room under such circumstances, we give some

HINTS TO ATTENDANTS.

The room during confinement should be kept quiet. Too many persons must not be allowed in it, as they contaminate the air, and are apt by their conversation to disturb the patient, either exciting or depressing her. So soon as the head is born, it should be immediately ascertained whether the neck is encircled by the cord; if so, it should be removed or loosened. The neglect of this precaution may result fatally to the infant, as happened a short time since in our own practice; the infant, born a few minutes before our arrival, being found strangled with the cord about its neck. It is also of importance at once to allow of the entrance of air to the face, to put the finger in the mouth to remove any obstruction which may interfere with respiration, and to lay the babe on its right side, with the head removed from the discharges. The cord should not be tied until the infant is heard to cry. The ligature is to be applied in the following manner:—A piece of bobbin is thrown around the navel-string, and tied with a double knot at the distance of three fingers' breadth from the umbilicus; a second piece is tied an inch beyond the first, and the cord divided with the scissors between the two, care being taken not to clip off a finger or otherwise injure the unsuspecting little infant, as has occurred in careless hands more than once. When the child is separated from the mother, a warm blanket or a piece of flannel should be ready to receive it. In

taking hold of the little stranger, it may slip out of the hands and be injured. To guard against this accident, which is very apt to occur with awkward or inexperienced persons, always seize the back portion of the neck in the space bounded by the thumb and first finger of one hand, and grasp the thighs with the other. In this way it may be safely carried. It should be transferred, wrapped up in its blanket, to some *secure* place, and never put in an arm-chair, where it may be crushed by some one who does not observe that the chair is already occupied. The head of the child should not be so covered as to incur any danger of suffocation.

ATTENTION TO THE MOTHER.

When the after-birth has come away, the mother should be drawn up a short distance—six or eight inches—in bed, and the sheet which has been pinned around her, together with the temporary dressing of the bed removed, a clean folded sheet being introduced under the hips. The parts should be gently washed with warm water and a soft sponge or a cloth, after which an application of equal parts of claret wine and water will prove pleasant and beneficial. We have also found the anointing of the external and internal parts with goose grease, which has been thoroughly washed in several hot waters, to be very soothing and efficient in speedily allaying all irritation. This ought all to be done under cover, to guard against the taking of cold. The chemise pinned up around the breast should now be loosened, and the woman is ready for the application of the

bandage, which is to be put on next the skin. If properly and nicely adjusted, it will prove very grateful. The directions for making it have already been given. In order to apply it, one half of its length should be folded up into plaits, and the mother should lie on her left side; lay the plaited end of the bandage underneath the left side of the patient, carrying it as far under as possible, and draw the loose end over the abdomen; then let the mother roll over on her back upon the bandage, and draw out the plaited end. If the abdominal muscles are much relaxed and the hip-bones prominent, a compress of two or three towels will be wanted. The bandage should be first tightened in the middle by a pin applied laterally, for strings should never be employed. The pins should be placed at intervals of about an inch. The lower portion of the bandage should be made quite tight, to prevent it slipping up. The mother is now ready to be drawn up in bed upon the permanent dressing: this should be done without any exertion on her part. A napkin should be laid smoothly *under* the hips (never folded up), to receive the discharges. If she prefer to lie on her left side, place a pillow behind her back.

ATTENTION TO THE CHILD.

The baby may now be washed and dressed. Before beginning, everything that is wanted should be close at hand, namely a basin of warm water, a large quantity of lard or some other unctuous material, soap, fine sponge, and a basket containing the binder, shirt, and other articles of clothing.

First rub the child's body thoroughly with lard. The covering can only be removed in this way; the use of soap alone will have no effect unless the friction be so great as to take off also the skin. The nurse should take a handful of lard and rub it in with the palm of the hand, particularly in the flexures of the joints. In anointing one part, the others should be covered, to prevent the child from taking cold. If the child is thus made perfectly clean, do not use any soap and water, because the skin is left in a more healthful condition by the lard, and there is risk of the child's taking cold from the evaporation of the water. But the face may be washed with soap and water, great care being taken not to let the soap get into the child's eyes, which is one of the most frequent causes of sore eyes in infants. The navel-string is now to be dressed. This is done by wrapping it up in a circular piece of soft muslin, well oiled, with a hole in its centre. The bandage is next to be applied. The object of its use is to protect the child's abdomen against cold, and to keep the dressing of the cord in its position. The nature, shape, and size of the binder have been described. It should be pinned in front, three pins being generally sufficient. The rest of the clothing before enumerated is then put on.

The child is now to be *applied to the breast at once.* This is to be done, for three reasons. First, it very often prevents flooding, which is apt otherwise to occur. Secondly, it tends to prevent milk fever, by averting the violent rush of the milk on the third day, and the consequent engorgement of the breast

and constitutional disturbance. The third reason is, that there is always a secretion in the breast from the first, which it is desirable for the child to have; for it acts as a cathartic, stimulating the liver, and cleansing the bowels from the secretions which fill them at the time of birth. There is generally sufficient nourishment in the breasts for the child for the first few days. The mother may lie on the one side or the other, and receive the child upon the arm of that upon which she is lying. If the nipple be not perfectly drawn out so that the child can grasp it in its mouth, the difficulty may be overcome by filling a porter-bottle with hot water, emptying it, and then placing the mouth of the bottle immediately over the nipple. This will cause, as the bottle cools, a sufficient amount of suction to elevate the sunken nipple. The bottle should then be removed and the child substituted, —a little sugar and water or sweetened milk being applied, if necessary, to tempt the child to take the breast.

FURTHER ATTENTION TO THE MOTHER.

The patient should be cleansed every *four or five hours.* A soft napkin, wet with warm soap and water, should for this purpose be passed underneath the bed-clothing, without exposing the surface to a draft of air. After using the soap and water, apply again the dilute claret wine and the goose grease. Much of the safety of the mother depends upon the observation of cleanliness. The napkin should not be allowed to remain so long as to become saturated with the discharges.

The mother should maintain rigidly the recumbent position for the first few days, not raising her shoulders from the pillow for any purpose, and should abstain from receiving visitors, and from any social conversation for the first twenty-four hours.

For the first three or four days, until the milk has come and the milk fever passed, the mother should live upon light food,—oatmeal gruel, tea and toast, panada, or anything else of little bulk and unstimulating character. Afterwards the diet may be increased by the addition of chicken, lamb, mutton or oyster broth, buttered toast, and eggs. The object of light nourishment at first is to prevent the too rapid secretion of milk, which might be attended with evil local and constitutional effects. If, however, the mother be in feeble health, it will be necessary from the outset that she shall be supported with nourishing concentrated food. *Beef-tea* will then be found very serviceable, particularly if made according to the following recipe :—Take a pound of fresh beef from the loins or neck. Free it carefully from all fat. Cut it up into fine pieces, and add a very little salt and five grains of unbroken black pepper. Pour on it a pint of cold water, and *simmer* for forty minutes. Then pour off the liquor, place the meat in a cloth, and, after squeezing the juice from it into the tea, throw it aside. Return to the fire, and boil for ten minutes.

After the first week, the diet of the lying-in woman should always be nutritious, though plain and simple. The development of the mammary glands, the production of the mammary secretion, and the reduction which takes place in the size of

the womb, all require increased nourishment, that they may be properly performed.

After the third or fourth day *the dress should be changed.* The dress worn during labor, if our directions have been carried out, will not have been soiled The clothing should be changed without uncovering the person, and without raising the head from the pillow. Pull the bed-gown from over each arm, and draw it out from under the body. Then unfasten the chemise in front and draw it down underneath her so that it can be removed from below, as it should not be carried over the head. Place her arms in the sleeves of the clean chemise, throw its body over her head, and, without lifting her shoulders from the bed, draw it down. Then change the bed-gown in the same manner.

In changing the upper sheet, it should be pulled off from below, and the clean one carried down in its place from above, underneath the other clothing, which can be readily accomplished by plaiting the lower half. In introducing a clean under-sheet, one side of it should be plaited and placed under the patient, lying on her left side ; when she turns on her back, the plaits can then be readily drawn out. These directions, though apparently trivial, are important. The object is to guard against the great danger to which the mother is exposed by sitting up in bed for even a few minutes during the first week.

Cathartic medicine should not be administered the first, the third, or any other day after confinement, unless it is needed. If the patient is perfectly comfortable, has no pain in the abdomen, no head-

ache, and is well in every respect, she should be let alone, even if her bowels have not been moved. If a laxative be called for, citrate of magnesia is much pleasanter and equally as efficacious as the caster oil so frequently administered on this occasion

TO HAVE LABOR WITHOUT PAIN.

Is it possible to avoid the throes of labor, and have children without suffering? This is a question which science answers in the affirmative. Medical art brings the waters of Lethe to the bedside of woman in her hour of trial. Of late years chloroform and ether have been employed to lessen or annul the pains of childbirth, with the same success that has attended their use in surgery. Their administration is never pushed so as to produce complete unconsciousness, unless some operation is necessary, but merely so as to diminish sensibility and render the pains endurable. These agents are thus given without injury to the child, and without retarding the labor or exposing the mother to any danger. When properly employed, they induce refreshing sleep, revive the drooping nervous system, and expedite the delivery.

They should never be used in the absence of the doctor. He alone is competent to give them with safety. In natural, easy, and short labor, where the pains are readily borne, they are not required. But in those lingering cases in which the suffering is extreme, and, above all, in those instances where instruments have to be employed, ether and chloroform have a value beyond all price.

MORTALITY OF CHILDBED.

The number of the pregnancy affects the danger to be expected from lying-in. It has been declared by excellent authority, that the mortality of first labors, and of childbed fever following first labors, is about twice the mortality attending all subsequent labors collectively. After the ninth labor the mortality increases with the number. A woman having a large family, therefore, comes into greater and increasing risk as she bears her ninth and successive children.

The age of the woman also affects the mortality accompanying confinement. The age of least mortality is near twenty-five years. On either side of this, mortality increases with the diminution or increase of age. The age of the greatest safety in confinement therefore corresponds to the age of greatest fecundity. And during the whole of childbearing life, safety in labor is directly as fecundity, and *vice versâ*. Hence modern statistics prove the correctness of the saying of Aristotle, that 'to the female sex premature wedlock is peculiarly dangerous, since, in consequence of anticipating the demands of nature, many of them suffer greatly in childbirth, and many of them die.' As the period from twenty to twenty-five is the least dangerous for childbirth, and as first labors are more hazardous than all others before the ninth, it is important that this term of least mortality be chosen for entering upon the duties of matrimony. This we have already pointed out in speaking of the age of pubility

The sex of the child is another circumstance affecting the mortality of labor. Professor Simpson of Edinburgh has shown that a greater proportion of deaths occurs in women who have brought forth male children.

The duration of labor also influences the mortality of lying-in. The fatality increases with the length of the labor. It must be recollected, however, that the duration of labor is only an inconsiderable part of the many causes of mortality in childbirth.

WEIGHT AND LENGTH OF NEW-BORN CHILDREN

The average weight of infants of both sexes at the time of birth is about seven pounds. The average of male children is seven and one-third pounds; of female, six and two-thirds pounds. Children which at full term weigh less than five pounds are not apt to thrive, and usually die in a short time.

The average length at birth, without regard to sex, is about twenty inches, the male being about half an inch longer than the female.

In regard to the relation between the size of the child and the age of the mother, the interesting conclusion has been arrived at, that the average weight and length of the mature child gradually increases with the age of the mother up to the twenty-fifth year. Mothers between the ages of twenty-five and twenty-nine have the largest children. From the thirtieth year they gradually diminish. The first child of a woman is of comparatively light weight. The first egg of a fowl is smaller than those which follow.

The new-born children in our Western States seem to be larger than the statistics show them to be in the various States of Europe, and apparently even than in our Eastern States. In the Report on Obstetrics of the Illinois State Medical Society for 1868, it is stated that Quincy, Ill., produced during the year six male children whose average weight at birth was thirteen and a quarter pounds, the smallest weighing twelve pounds, and the largest seventeen and a half, which was born at the end of four hours' labor, without instrumental or other interference. A recent number of a Western medical journal reports the birth at Detroit, in February last, of a well-formed male infant twenty-four and a-half inches long, weighing sixteen pounds. The woman's weight, *after labor*, is stated as only ninety-two pounds. An English physician delivered a child by the forceps which weighed seventeen pounds twelve ounces, and measured twenty-four inches. These are the largest well-authenticated new-born infants on record.

DURATION OF LABOR.

The length of a natural labor may be said to vary between two and eighteen hours. The intervals between the pains are such, however, that the actual duration of suffering, even in the longest labor, is comparatively very short. The first confinement is much longer than subsequent ones.

The *sex* of the child has some influence on the duration of labor. According to Dr. Collins of the Lying-in Hospital of Dublin, the average with *male*

births is one hour and four minutes longer than with *female.* The *weight* of the child also affects the time of labor. Children weighing over eight pounds average four hours and eight minutes longer in birth than those of less than eight pounds weight

STILL-BIRTHS.

The statistics of nearly fifty thousand deliveries which occurred at the Royal Maternity Charity, London, show a percentage of nearly five still-born, or one in twenty-seven.

There are more boys still-born than girls. We have already spoken of the fact that male births are more tedious, and that a larger number of males die in the first few years of life than females. This series of misfortunes has been attributed to the large size which the male fœtus at birth possesses over the female.

IMPRUDENCE AFTER CHILDBIRTH.

After the birth of the child at full term, or at any other period of pregnancy, the womb, which had attained such wonderful proportions in a few months, begins to resume its former size. This process requires at least six weeks after labor for its full accomplishment. Rest is essential during this period. A too early return to the ordinary active duties of life retards or checks this restoration to normal size, and the womb being heavier, exposes the woman to great danger of uterine displacements. Nor are these the only risks incurred by a too hasty renewal of active movements. The

surface, the substance, and the lining membrane of the womb are all very liable, while this change from its increased to its ordinary bulk is occurring, to take on inflammation after slight exposure. The worst cases of uterine inflammation and ulceration are thus caused. A 'bad getting-up,' prolonged debility, pain, and excessive discharge, are among the least penalties consequent upon imprudence after confinement. It is a mistake to suppose that hard-working women in the lower walks of life attend with impunity to their ordinary duties a few days after confinement. Those who suffer most from falling of the womb and other displacements are the poor, who are obliged to get up on the ninth day and remain upright, standing or walking for many hours with an over-weighted womb. Every physician who has practised much among the poor, has remarked upon the great frequency of diseases of the womb, which is to be attributed to the neglect of rest, so common among them, after child-birth. If this be true of vigorous women accustomed to a hardy life, how much more apt to suffer from this cause are the delicately nurtured, whose systems are already, perhaps, deteriorated, and little able to resist any deleterious influences!

A mother should remain in bed for at least two weeks after the birth of the child, and should not return to her household duties under a month; she should also take great pains to protect herself from cold, so as to escape the rheumatic affections to which at this time she is particularly subject. If these directions were generally observed, there would

be less employment for physicians with diseases peculiar to women, and fewer invalids in our homes.

TO PRESERVE THE FORM AFTER CHILDBIRTH.

This is a matter of great anxiety with many women; and it is proper that it should be, for a flabby, pendulous abdomen is not only destructive to grace of movement and harmony of outline, but is a positive inconvenience.

To avoid it, be careful not to leave the bed too early. If the walls of the abdomen are much relaxed, the bed should be kept from two to three weeks. Gentle frictions daily with spirits and water will give tone to the muscles. But the most important point is to wear for several months a *well-fitting* bandage—not a towel pinned around the person, but a body-case of strong linen, cut bias, setting snugly to the form, but not exerting unpleasant pressure. The pattern for this has already been given.

THE MOTHER.

MATERNAL DUTIES AND PRIVILEGES.

IT has been well said by Madame Sirey, that women who comprehend well their rights and duties as mothers of families, certainly cannot complain of their destiny. If there exists any inequality in the means of pleasure accorded to the two sexes, it is in favor of the woman. The mother who lives in her children and her grandchildren has the peculiar privilege of not knowing the grief of becoming old.

'So low down in the scale of creation as we can go,' says Professor Laycock of Edinburgh, 'wherever there is a discoverable distinction of sex, we find that maternity is the first and most fundamental duty of the female. The male never in a single instance, in any organism, whether plant or animal, contributes nutrient material.'

Among the Romans, it was enacted that married women who had borne three children, or if freedwomen, four, had special privileges of their own in cases of inheritance, and were exempted from tutelage. Juvenal has recorded the reverence paid in Rome to the newly-made mother, and the sign by which her house was designated and protected from rude intruders, namely, by the suspension of wreaths over the door.

At various times, and in different countries, legislators have made laws discriminating in favor of matrons, justly regarding the family as the source of the wealth and prosperity of the State.

Louis XIV. granted, by the edict of 1666, certain pensions to parents of ten children, with an increase for those who had twelve or more.

NURSING.

So soon as the infant is born, it ought to be placed at the breast. From this source it should receive its *only* nourishment during the first four or six months, and in many cases the first year, of its life. The child which the mother has carried for nine months and brought with suffering into the world, still depends upon her for its existence. At the moment of its birth her duties to the infant, instead of ceasing, augment in importance. The obligation is imposed upon her of nourishing it with *her own* milk, unless there are present physical conditions rendering nursing improper, of which we are about to speak. It is well known that the artificial feeding of infants is a prominent cause of mortality in early life. The foundlings of large cities furnish the most striking and convincing proof of the great advantages of nursing over the use of artificially-prepared food. On the continent of Europe, in Lyons and Parthenay, where foundlings are wet-nursed from the time they are received, the deaths are 33.7 and 35 per cent. In Paris, Rheims, and Aix, where they are wholly dry-nursed, their deaths are 50.3, 63.9, and 80 per cent. In New York city, the foundlings, number-

ing several hundred a year, were, until recently, dry-nursed, with the fearful and almost incredible mortality of nearly one hundred per cent. The employment of wet-nurses has produced a much more favorable result. Therefore, if for any reason the mother cannot nurse her own child, a hired wet-nurse should be procured. This brings us to the consideration of

HINDRANCES TO NURSING, AND WHEN IT IS IMPROPER.

Women who have never suckled often experience difficulty in nursing, on account of the sunken and flat condition of the nipple. We have pointed out the causes of this depression, and how by early attention before the birth of the infant it may be prevented. If, however, these precautions have been neglected, and it is found that the nipple is not sufficiently prominent to be grasped by the child's mouth, it may be drawn out by a common breast-pump, by suction with a tobacco-pipe, by the use of the hot-water bottle in the manner described, or by the application of an infant a little older. Neither the child nor the mother should be constantly fretted in such cases by frequent ineffectual attempts at nursing. Such unremitting attention and continual efforts produce nervousness and loss of sleep, and result in a diminution of the quantity of the milk. The child should not be put to the breast oftener than once in an hour and a half or two hours. By the use of the expedients mentioned, the whole difficulty will be overcome in a few days.

Delay in applying the child to the breast is a common cause of trouble. After it has been fed for several days with the spoon or bottle, it will often refuse to suck. When nursing is deferred, the nipple also becomes tender. For these reasons, as well as the others detailed in our directions for the care of the new-born infant, the child should always, in say from two to three hours after labor, be placed at the breast.

Ulcerated and fissured nipples should be treated by the doctor in attendance. As it is highly desirable, and nearly always possible, to avoid them, we would again call attention to the manner of doing so, indicated in a previous article. Fissured nipples sometimes do harm to the infant, by causing it to swallow blood, disturbing in this way the digestion. But all these local interferences with nursing can generally be obviated in the course of a few weeks, and rarely entirely prevent the exercise of this maternal pleasure and duty.

But there are certain *physical conditions which necessitate the employment of a hired wet-nurse*, or weaning. If the mother belongs to a consumptive family, and is herself pale, emaciated, harassed by a cough, and exhausted by suckling, wet-nursing is eminently improper. A temporary loss of strength under other circumstances should not induce a mother at once to wean her child; for it is often possible, by the judicious use of tonics, nourishing food, and stimulants, to entirely restore the health with the child at the breast. It should always be recollected, however, that the milk of those in decidedly infirm health is incapable of properly

nourishing the child. Professor J. Lewis Smith of New York quotes, in his recent work on Diseases of Children, several instructive cases which show the danger sometimes attending suckling, and which may imperatively demand its discontinuance. 'A very light-complexioned young mother, in very good health, and of a good constitution, though somewhat delicate, was nursing for the third time, and, as regarded the child, successfully. All at once this young woman experienced a feeling of exhaustion. Her skin became constantly hot; there were cough, oppression, night-sweats; her strength visibly declined, and in less than a fortnight she presented the ordinary symptoms of consumption. The nursing was immediately abandoned, and from the moment the secretion of milk had ceased, all the troubles disappeared.' Again: 'A woman of forty years of age having lost, one after another, several children, all of which she had put out to nurse, determined to nurse the last one herself. This woman being vigorous and well built, was eager for the work, and, filled with devotion and spirit, she gave herself up to the nursing of her child with a sort of fury. At nine months she still nursed him from fifteen to twenty times a day. Having become extremely emaciated, she fell all at once into a state of weakness, from which nothing could raise her, and two days after the poor woman died of exhaustion.'

It does not always follow, that because the mother is sick the child should be taken from the breast. It is only necessary in those affections in which there is great depression of the vital

powers, or in which there is danger of communicating the disease to the child. In the city, where artificially-fed infants run great risks, extreme caution should be exercised in early weaning.

Inflammation of either of the breasts necessitates the removal of the infant from the affected side, and its restriction to the other. As the inflammation gets well and the milk reappears, the first of it should always be rejected, as it is apt to be thick and stringy, after which nursing may be resumed.

RULES FOR NURSING.

The new-born child should be nursed about every second hour during the day, and not more than once or twice at night. Too much ardor may be displayed by the young mother in the performance of her duties. Not knowing the fact that an infant quite as frequently cries from being overfed as from want of nourishment, she is apt to give it the breast at every cry, day and night. In this manner her health is broken down, and she is compelled perhaps to wean her child, which, with more prudence and knowledge, she might have continued to nurse without detriment to herself. It is particularly important that the child shall acquire the habit of not requiring the breast more than once or twice at night. This, with a little perseverance, can readily be accomplished, so that the hours for rest at night, so much needed by the mother, may not be interfered with. Indeed, if the mother does not enjoy good health, it is better for her not to nurse at all at night, but to have the child fed once or twice with a little cow's milk. For this purpose, take the

upper third of the milk which has stood for several hours and dilute it with water, in the proportion of one part of milk to two of water.

In those cases in which the milk of the mother habitually disagrees with the infant, the attention of the doctor should at once be called to the circumstance. A microscopic examination will reveal to the intelligent practitioner the cause of the difficulty, and suggest the remedy.

It may be well here to mention—as, judging from the practice of many nurses and mothers, it seems to be a fact not generally known or attended to—that human milk contains *all that is required* for the growth and repair of the various parts of the child's body. It should therefore be the sole food of early infancy.

INFLUENCE OF DIET ON THE MOTHER'S MILK.

Certain articles of food render the milk acid, and thus induce colicky pains and bowel complaints in the child. Such, therefore, as are found, in each individual case, to produce indigestion and an acid stomach in the mother, should be carefully avoided by her.

Retention of the milk in the breasts alters its character. The longer it is retained, the weaker and more watery it becomes. An acquaintance with this fact is of practical importance to every mother; for it follows from it, that the milk is richer the oftener it is removed from the breast. Therefore, if the digestion of the child is disordered by the milk being too rich, as sometimes happens, the remedy is to give it the breast less frequently by which not

only is less taken, but the quality is also rendered poorer. On the contrary, in those instances in which the child is badly nourished and the milk is insufficient in quantity, it should be applied oftener, and the milk thus rendered richer.

The milk which last flows is always the richest. Hence, when two children are nursed, the first is the worse served.

INFLUENCE OF PREGNANCY ON THE MILK.

Menstruation is ordinarily absent, and pregnancy therefore impossible, during the whole course of nursing, at least during the first nine months. Sometimes, however, mothers become unwell at the expiration of the sixth or seventh month; in rare instances, within the first five or six weeks after confinement. When the monthly sickness makes its appearance without any constitutional or local disturbance, it is not apt to interfere with the welfare of the infant. When, on the contrary, the discharge is profuse, and attended with much pain, it may produce colic, vomiting, and diarrhœa in the nursling. The disturbance in the system of the child ordinarily resulting from pregnancy in the mother is such that, as a rule, it should be at once weaned so soon as it is certain that pregnancy exists. The only exceptions to this rule are those cases in the city, during the hot months, in which it is impossible either to procure a wet-nurse or to take the child to the country to be weaned. In cold weather an infant should certainly be weaned, if it has attained its fifth or sixth month, and the mother has become pregnant.

INFLUENCE OF THE MOTHER'S MIND OVER THE NURSING CHILD.

We have spoken, in treating of mothers' marks, of the influence of the mother's mind upon her unborn offspring. The influence of the maternal mind does not cease with the birth of the child. The mother continues during the whole period of nursing powerfully to impress, through her milk, the babe at her breast. It is well established, that mental emotions are capable of changing the quantity and quality of the milk, and of thus rendering it hurtful, and even dangerous, to the infant.

The secretion of milk may be entirely stopped by the action of the nervous system. Fear, excited on account of the child which is sick or exposed to accident, will check the flow of milk, which will not return until the little one is restored in safety to the mother's arms. Apprehension felt in regard to a drunken husband, has been known to arrest the supply of this fluid. On the other hand, the secretion is often augmented, as every mother knows, by the *sight* of the child, nay, even by the *thought* of him, causing a sudden rush of blood to the breast known to nurses as the *draught*. Indeed a strong desire to furnish milk, together with the application of the child to the breast, has been effectual in bringing about its secretion in young girls, old women, and even men.

Sir Astley Cooper states that 'those passions which are generally sources of pleasure, and which when moderately indulged are conducive to health, will, when carried to excess, alter, and even entirely check the secretion of milk.'

But the fact which it is most important to know is, that *nervous agitation may so alter the quality of the milk as to make it poisonous.* A fretful temper, fits of anger, grief, anxiety of mind, fear, and sudden terror, not only lessen the quantity of the milk, but render it thin and unhealthful, inducing disturbances of the child's bowels, diarrhœa, griping, and fever. Intense mental emotion may even so alter the milk as to cause the death of the child. A physician states, in the *Lancet*, that, having removed a small tumour from behind the ear of a mother, all went on well until she fell into a violent passion. The child being suckled soon afterwards, it died in convulsions. Professor Carpenter records in his Physiology two other fatal instances: in one, the infant put to the breast immediately after the receipt of distressing news by the mother, died in her arms in the presence of the messenger of the ill-tidings; in the other, the infant was seized with convulsions on the right side and paralysis on the left, on sucking directly after the mother had met with an agitating occurrence. Another case of similar character may be mentioned. A woman while nursing became violently excited on account of a loss she had just met with from a theft. She gave her child the breast while in an intense passion. The child first refused, but ultimately took it, when severe vomiting occurred. In the course of some hours the child took the other breast, was attacked at once with violent convulsions, and died in spite of all that could be done for it.

The following cases are related by Professor Car-

penter as occurring within his own knowledge. They are valuable as a warning to nursing mothers to avoid all exciting or depressing passions. A mother of several healthy children, of whom the youngest was a vigorous infant a few months old, heard of the death from convulsions of the infant child of an intimate friend at a distance, whose family had increased in the same manner as her own. The unfortunate circumstance made a strong impression on her mind, and being alone with her babe, separated from the rest of her family, she dwelt upon it more than she otherwise would have done. With her mind thus occupied, one morning, shortly after nursing her infant, she laid it in its cradle, asleep and apparently in perfect health. Her attention was soon attracted to it by a noise. On going to the cradle she found it in a convulsion, which lasted only a few moments, and left it dead. In the other case, the mother had lost several children in early infancy, from fits. One infant alone survived the usually fatal period. While nursing him, one morning she dwelt strongly upon the fear of losing him also, although he appeared to be a very healthy child. The infant was transferred to the arms of the nurse. While the nurse was endeavouring to cheer the mother by calling her attention to the thriving appearance of her child, he was seized with a convulsion, and died almost instantly in her arms. Under similar circumstances, a child should not be nursed by its mother, but by one who has reared healthy children of her own and has a tranquil mind.

An interesting illustration of the powerful seda-

tive action of the mother's milk—changed in consequence of great mental distress — upon the impressible nervous system of the infant, is furnished by a German physician. 'A carpenter fell into a quarrel with a soldier billeted in his house, and was set upon by the latter with his drawn sword. The wife of the carpenter at first trembled from fear and terror, and then suddenly threw herself furiously between the combatants, wrested the sword from the soldier's hand, broke it in pieces, and threw it away. During the tumult, some neighbors came in and separated the men. While in this state of strong excitement, the mother took up her child from the cradle, where it lay playing and in the most perfect health, never having had a moment's illness. She gave it the breast, and in so doing sealed its fate. In a few minutes the infant left off sucking, became restless, panted, and sank dead upon its mother's bosom. The physician, who was instantly called in, found the child lying in the cradle as if asleep, and with its features undisturbed ; but all his resources were fruitless. It was irrevocably gone.'

Professor William A. Hammond of New York mentions, in a recent number of the *Journal of Psychological Medicine*, several instances, from his own practice, of affections in the child caused by the mother's milk. 'A soldier's wife, whilst nursing her child, was very much terrified by a sudden thunderstorm, during which the house where she was then quartered was struck by lightning. The infant, which had always been in excellent health, was immediately attacked with vomiting and con-

vulsions, from which it recovered with difficulty.'

'A lady, three weeks after delivery, was attacked with puerperal insanity. She nursed her child but once after the accession of the disease, and in two hours subsequently it was affected with general convulsions, from which it died during the night. Previous to this event it had been in robust health.'

Again, Dr. Seguin of New York relates, in his work on Idiocy, a number of cases of *loss of mind* produced by the altered state of the mother's milk. 'Mrs. B. came out from a ball-room, gave the breast to her baby, three months old: he was taken with spasms two hours after, and since is a confirmed idiot and epileptic.'

'In a moment of great anxiety Mrs. C. jumped into a carriage with her suckling, a girl of fifteen months, so far very intelligent and attractive. The child took the breast only once in a journey of twenty miles, but before arriving at destination she vomited several times, with no interruption but that of stupor, and after an acute fever the little girl settled down into the condition of a cripple and idiot.'

The celebrated physician Boerhaave mentions the milk of an angry nurse as among the causes of *epilepsy*.

These facts show the importance of a placid mind and cheerful temper in the mother while nursing

POSITION OF THE MOTHER WHILE NURSING.

The habit of nursing a child while sitting up in bed or half reclining upon a lounge is a wrong one. Such

a position is injurious to the breasts, hurtful to the woman's figure, and apt to cause backache. When in bed, the mother ought always to be recumbent while the child is at the breast, held upon the arm of the side upon which she lies. When out of bed, she should sit upright while nursing.

QUANTITY OF MILK REQUIRED BY THE INFANT.

The amount of milk furnished every day by a healthy woman has been estimated at from a quart to three pints. An infant one or two months of age takes about two wine-glassfuls, or three ounces, every meal; that is, as it sucks every two hours, excepting when asleep, about five half-pints during the twenty-four hours. When it attains the age of three months, it thrives well on five meals a day; the quantity taken at each meal then, the stomach being more capacious, amounting to about half a pint. A child above three months of age ordinarily requires three pints daily.

A healthy mother is fully capable of furnishing this quantity of milk per day, and of affording the child all the nourishment it needs until four or six months after birth.

The quantity of the mother's milk varies according to many circumstances. It is most abundant and also most nutritious in nursing women between the ages of fifteen and thirty; least so, in those from thirty-five to forty. There is likewise a great difference in different women in this respect; and in the same woman varying conditions of health influence the amount of milk secreted.

THE QUALITIES OF A GOOD NURSING-MOTHER are well described by Professor J. Lewis Smith. 'The best wet-nurses are usually robust, without being corpulent. Their appetite is good, and their breasts are distended, from the number and large size of the blood-vessels and milk-ducts. There is but a moderate amount of fat around the gland, and tortuous veins are observed passing over it. Such nurses do not experience a feeling of exhaustion, and do not suffer from lactation. The nutriment which they consume is equally expended on their own sustenance and the supply of milk. There are other good wet-nurses who have the physical condition described, but whose breasts are small. Still the infant continues to suck till it is satisfied, and it thrives. The milk is of good quality, and it appears to be secreted mainly during the time of suckling. Other mothers evidently decline in health during the time of nursing. They furnish milk of good quality and in abundance, and their infants thrive; but it is at their own expense. They themselves say, and with truth, that what they eat goes to milk. They become thinner and paler, are perhaps troubled with palpitation, and are easily exhausted. They often find it necessary to wean before the end of the usual period of lactation. There is another class whose health is habitually poor, but who furnish the usual quantity of milk without the exhaustion experienced by the class just described. The milk of these women is of poor quality. It is abundant, but watery. Their infants are pallid, having soft and flabby fibre.'

OVER-ABUNDANCE OF MILK.

An excessive amount of milk often distends the breasts of those women who are prone to have long and profuse monthly sickness. It is also apt to occur in those subject to bleeding piles. It may be produced by any excitement of the womb or ovaries, and by over-nursing. In these cases there is usually a constant oozing away and consequent loss of milk. The mother is troubled by this overflow, because it keeps her clothing wet; and the child suffers because of the unnutritious, watery character of the milk under such circumstances.

This over-abundant supply may be moderated and the quality improved by diminishing the quantity of drink, and by the use of preparations of iron. Fifteen drops of the muriatic tincture of iron, taken three times a day in a little sweetened water, through a glass tube, will be useful. It will lessen the amount of the milk, and make it richer. So soon as these objects are accomplished, the medicine should be discontinued; as, if taken too long, it may so much diminish the milk as to necessitate weaning. The application of a cloth, wrung out in cold water, around the nipples is also of value. It is to be removed so soon as it becomes warm, and reapplied. In those cases in which the trouble seems to be not so much an over-supply as an inability to retain the milk, the administration of tonics addressed to the nervous system, and the local use of astringents and of collodion around the nipples, will overcome the difficulty; but these remedies can only be employed successfully by the

physician. And to him alone should be entrusted the use of those medicines which directly diminish the amount of milk secreted within the breasts. The expedients we have mentioned are the only ones which can be safely employed by the mother herself in this annoying affection.

SCANTINESS OF MILK.

Some mothers have habitually an insufficiency of milk. They are most numerous in large cities, and among working women whose daily occupations require a separation from the infant. Indigestion, and the want of a proper amount of nourishing food, cause a diminution in the quantity of milk. So also do overfeeding and gormandizing. Age lessens the secretion of milk, as has been already mentioned. Those who first bear children late in life, have less milk for them than they who begin earlier. In some cases want of milk in the breasts seems to be due to its reabsorption. In such instances it may make its appearance at distant parts. Thus, a case has been recorded of the coughing up of milk following sudden arrest of the secretion, and others in which it presented itself as an exudation in the groins.

In the treatment of a scanty formation of milk, one of the best measures which can be resorted to is the frequent application of the child to the breast. In addition, the flow may be increased by milking the breasts by means of the thumb and finger, suction through a tobacco-pipe, or the breast-pump, or by the use of another infant. Friction of the breasts, and forcible draw-

ing upon the nipples, will make them sore, and so irritate them as to defeat the object in view. A change of scene, fresh air, and out-door exercise, attention to personal cleanliness, and the improvement of the general health, all increase the quantity, and produce a favourable effect upon the quality, of the milk. A sojourn at the sea-side often promotes an abundant secretion of milk. The diet should be regulated by the condition of the constitution. By those who are weak and pale, a large proportion of meat is required. On the contrary, those who are full-blooded and corpulent should restrict the amount of their animal food, and take more exercise in the open air. Oatmeal gruel enjoys a reputation for increasing the flow of milk. A basin of it sometimes produces an immediate effect. The same is true of cow's milk. Porter or ale once or twice a day, in those with reduced systems and impaired digestion and appetite, will be found useful. Anise, fennel, and caraway-seeds, given in soup, act sometimes as stimulants upon the secretion of milk. The application of a poultice made from the pulverized leaves of the castor-oil plant is a most efficient remedy when milk fails to make its appearance in the breast in sufficient quantity after confinement

WET-NURSING BY VIRGINS, AGED WOMEN, AND MEN.

As a rule, the secretion of milk is limited to one sex, and in that is confined to a short period after childbirth. But there are many cases on record of the flowing of milk in women not recently mothers,

in girls before the age of puberty, in aged women, and even in individuals of the male sex. In such instances, the secretion is induced by the combined influence, acting through the nervous system, of a strong desire for its occurrence, of a fixed attention towards the mammary glands, and of suction from the nipples.

Travellers among savage nations report many examples of such unnatural nursing. Dr. Livingstone says he has frequently seen in Africa a grandchild suckled by a grandmother. Dr. Wm. A. Gillespie, of Virginia records, in the *Boston Medical and Surgical Journal*, the case of a widow, aged about sixty, whose daughter having died, leaving a child two months old, took the child and tried to raise it by feeding. The child's bowels became deranged, and being unable to procure a nurse, and her breasts being large and full, he advised her to apply the child, in hopes milk would come. She followed his advice perseveringly, and, to her astonishment, a plentiful secretion of milk was the result, with which she nourished the child, which afterwards became strong and healthy. A similar instance, still more remarkable, is recorded of a woman at seventy years, who twenty years wet-nursed a grandchild after her last confinement.

Cases of nursing in the opposite extreme of life are also well authenticated. The distinguished French physician Baudelocque has related that of a deaf and dumb girl, eight years old, who, by the repeated application to her breast of a young infant, which her mother was suckling, had suffi-

cient milk to nourish the child for a month, while the mother was unable to nurse it on account of sore nipples The little girl was shown to the Royal Academy of Surgery on the 16th of February, 1783. The quantity of milk was such, that by simply pressing the breast it was made to flow out in the presence of the Academy, and on the same day, at the house of Baudelocque, before a large class of pupils. Again, an interesting case is known of a young woman, who, in consequence of the habit of applying the infant of her mistress to her breast in order to quiet it, caused a free secretion of milk. In the Cape de Verde Islands, it is stated that virgins, old women, and even men, are frequently employed as wet-nurses. Humboldt speaks of a man, thirty-two years old, who gave the breast to his child for five months. Captain Franklin saw a similar case in the Arctic regions. Professor Hall presented to his class in Baltimore a negro, fifty-five years old, who had been the wet-nurse of all the children of his mistress.

Instances of powers of *prolonged nursing* in mothers are not uncommon. Indeed it is the habit among some nations to suckle children until they are three or four years of age, even though another pregnancy may intervene, so that immediately one child is succeeded at the breast by another. In those who have thus unnaturally excited the mammary glands, an irrepressible flow sometimes continues after the demand for it has ceased. Dr. Green published, some years ago, in the *New York Journal of Medicine and Surgery*,

the case of a woman, aged forty-seven, the mother of five children, who had had an abundant supply of milk for *twenty-seven years* consecutively. A period of exactly four years and a half occurred between each birth, and the children were permitted to take the breast until they were running about at play. At the time when Dr. G. wrote, she had been nine years a widow, and was obliged to have her breasts drawn daily, the secretion of milk being so copious. When, therefore, it is desirable, on account of the feebleness of the child, to protract the period of nursing, a wet-nurse should relieve the mother at the end of twelve or fifteen months.

RULES FOR CARE OF HEALTH WHILE NURSING.

From what we have previously said of the influence of the nervous system over the quantity and quality of the milk, and the instances we have adduced of the danger to the infant of all violent passions—such as anger, terror, anxiety, and grief—on the part of the mother, it will be apparent that it is of the greatest moment, during the whole course of nursing, to maintain a tranquil state of mind. Pleasing and peaceful emotions favor the normal secretion of milk, and go far towards securing the health of the child. When strongly affected by any powerful feelings, mothers should not give the breast, but should wait until they have calmed down to their usual tenor of temper. A case is related of a woman who was always excited by a highly electrical state of the atmosphere, and particularly during stormy weather. If when thus influenced she nursed her child he was sure to fall

into convulsions; while, if she delayed doing so until this nervous excitement had passed, no unpleasant symptoms occurred. But we have already dwelt at length upon this subject in speaking of the influence of the mind of the mother over the child at her breast, and need not therefore recur to it. The *food* while nursing must be nutritious and varied, though simple and unstimulating; and should consist both of meat and vegetables, soups, fish, flesh, and fowl, either in combination or succession. When the digestion requires stimulation and aid, a glass of mild ale twice a day will be useful. Wines, brandy, and whisky should not be taken without the advice of a physician. Moderate exercise in the open air and regular habits are necessary. A defective or excessive diet, fatigue, loss of rest at night, and irregularities and excesses of all kinds are unfavorable to mother and child. The proper methods of combating a tendency to overabundance or to scantiness of milk have been alluded to. Medicines, unless prescribed by the medical attendant, should rarely or never be taken during this period, as many of them enter the milk and may thus affect the child.

RELATIONS OF HUSBAND AND WIFE DURING NURSING.

After a natural and healthful confinement, the nurse usually remains with the mother for a period of four weeks. During the whole of this time the husband should occupy a separate apartment, and, according to some physicians, this separation should be protracted during the entire period of

nursing. But this is unusual, and in most cases unnecessary. Only those women who are warned by the recurrence of their monthly illness that they are liable to another pregnancy immediately, should insist on such an ascetic rule as this.

Unquestionably the quality of the milk is much deteriorated by a conception; and therefore, both in the interest of the mother and child, the husband should renounce his usual privileges at such times.

Most women do not have their periodical illness, and consequently are not liable to a second pregnancy, before seven months have elapsed after childbirth. There are, however, numerous exceptions to this rule, and it is impossible to foretell who will and who will not be the exception.

Moreover, as any excitement of the passions alters to some extent the secretion of the breasts, often to the injury of the child, it is every way advisable that great temperance be exercised in all cases in the marital relations at these epochs.

SIGNS OF OVER-NURSING.

The symptoms of over-nursing may be enumerated as follows:—Aching pain in the back; often, pain across the shoulders, and on the top of the head or forehead; marked paleness of the face; inability to sleep; frightful dreams when sleep does come; great debility; extreme depression of the spirits; disorders of the sight, and mental disturbances, which take on the form of melancholia, the delusions relating mostly to subjects of a religious character, to the effect that the unpardonable sin has been committed, and the

like. The headache is situated on the top of the head, and this spot may be noticed to be perceptibly hotter to the touch than other parts of the head. These symptoms indicate that the process of nursing is making too great a drain upon the system.

A woman in ordinary health will generally be able to suckle her child for twelve months without experiencing any bad effects. When the child is kept at the breast much beyond this time, most mothers render themselves liable to the injurious consequences we have mentioned. Some, indeed, cannot furnish the child all the nourishment it needs longer than three or four months, without detriment to themselves. In such cases, by feeding the child two or three times a day, the mother may be relieved of the burden of its entire support, and may thus be enabled to continue nursing. The proper food for infants, under these circumstances, will be shortly mentioned. The prostrating effects of nursing upon the body and mind of the mother are in some, though comparatively rare, instances so marked, as to render it altogether improper from the commencement.

The treatment of the condition of system described as resulting from over-nursing is, if it cannot be remedied by partially feeding the infant and the use of tonics, to remove the child from the breast altogether, and either procure a wet-nurse for it, or wean it. The wet-nurse is greatly to be preferred; and the preference is the stronger, the younger the child. We have already alluded to the great difficulty of rearing children from birth

by the hand. But after the infant has attained the age of several months, the danger of artificial feeding is much lessened, provided that the weaning does not take place during hot weather. This brings us to the consideration of the regimen of the mother who cannot nurse her own child, of the rules for the selection of a wet-nurse, of the directions for bringing up by hand, and of the proper method of weaning. These subjects we will now take up in the order mentioned.

DIRECTIONS FOR MOTHERS WHO CANNOT NURSE THEIR OWN CHILDREN.

There are many reasons why a mother should, if possible, nurse her own child. 'One of the principal is,' says the distinguished Dr. Tilt, 'that as nursing, generally speaking, prevents conception up to the tenth month, so it prevents the ruin of the mother's constitution by the too rapid bringing forth of children, and, we might even add, prevents a deterioration of the race, by the imperfect bringing up of this too-fast-got family.'

The same author appropriately adds: 'But while advocating maternal nursing, we must not forget that woman is not now the Eve of a primeval world; that human nature, wherever it is now met, in barbarous tribes or in civilised communities, is frequently so deteriorated, so diseased or prone to disease, that, by nursing, a mother may sometimes undermine her own frail constitution for the sake of giving an imperfect sustenance, and perhaps a poisonous heritage, to her babe.'

Some mothers, however anxiously they may

wish to do so, cannot nurse their children. They are shut out from this charming and tender experience in the life of a woman. The milk that comes is not sufficient, and quickly disappears. Because of the influence of the mind of the mother over the child at her breast, to which we have before called attention, women who are very hysterical and nervous, subject to violent perturbations of the mind, should not, particularly if there be any family tendency to insanity, expose the child to the mischievous effects latent in their milk. So, also, the presence of certain diseases forbids wet-nursing. Thus it is ordinarily prohibited by consumption, scrofula, skin affections of long standing, and cancer. In consumption, all efforts to suckle are frequently equally fatal to the mother and child. Even a strong hereditary predisposition to this disease may render it advisable, in the opinion of the family physician,—who should always be consulted in such a case,—to counteract the family taint by giving the milk of the healthiest nurse that can be procured. The condition of the nipples and of the breast may not permit of nursing. We have pointed out how best to guard against such an occurrence, in treating of the care of the nipples during pregnancy.

She who is to be debarred from nursing her own child should take care that it is not allowed to approach her breasts, as sometimes the mental and physical excitement caused by such an approach is of an injurious and lasting character.

Ordinarily, if this direction be followed out, the mother will have little trouble in regard to herself.

Under such circumstances, the chief danger is to the child. Hence the importance of knowing

HOW TO SELECT A WET-NURSE.

The choosing of a wet-nurse is a matter of great moment and responsibility. She should not be over thirty years of age, and should, if possible, be one who has previously suckled and had charge of children. Her own infant should be under the age of six months, for when above that age the milk sometimes disagrees with her new-born charge. One who has had several children should be preferred, because her milk is richer than after the first confinement.

The doctor should always examine carefully into the condition of the nurse's health, and into the quality and quantity of her milk. Various diseases and taints of the system are so hidden, while yet communicable to the child, that the knowledge and skill of a professional expert are required for their detection, and the protection of the nursling. In testing the quality of the milk, the experienced physician allows a little to rest on his finger nail, and by its examination readily decides as to its richness and fitness to nourish the little applicant for food. It is not necessary that the breasts should be large, as those of moderate size often furnish a sufficient amount of milk. But it is important that the nipples should be well developed. Those wet-nurses should be preferred in whom large blood-vessels are seen prominently passing in blue lines over the surface of the breasts. The possession of a vigorous, healthful infant is a good recommendation for a nurse, but care should be

taken to ascertain that it is her *own*, as nurses have been known to borrow for such an occasion, and so obtain credit not justly their due.

The moral and mental as well as physical characteristics should be considered. Temperance and cleanliness are indispensable in a wet-nurse, and the want of either should be an imperative reason for rejection. Equanimity of temper, cheerfulness, and an open, frank, affectionate disposition, are of course greatly to be desired.

If the nurse becomes 'unwell,' shall the child be taken from her? Should the monthly sickness reappear early, and both nurse and child be in good health, suckling may be continued. But when the return happens about the ninth or tenth month, the child should be weaned or the nurse changed. There is no physiological reason for preventing the nurse from living matrimonially; but if pregnancy occurs, the child should be taken from her.

The same rules that we have laid down for the mother for the care of her health while nursing, are of course applicable to the hired wet-nurse, and should be insisted upon and enforced.

Changing a nurse.—When it becomes necessary to change a nurse, for any of the reasons above mentioned, it may be done without injury to the child For fear of the effect of the unwelcome tidings upon the mind of the nurse, and the possible influence upon the milk, she should not be informed of the projected change until a successor has been secured to take her place at once. In choosing the second nurse, the same precautions should be had as in the selection of the first.

THE CHILD.

THE CARE OF INFANCY.

By infancy we mean that portion of the life of the child between birth and the completion of the teething—about two and a half years. The care of this period of human life is entrusted to the mother. It forms an important era in the physical life of woman. Its discussion is therefore germane to our subject. In order that the young mother may fully appreciate the responsibilities of her position, she should know something of the liability of infants to sickness and death.

Out of one thousand children born, one hundred and fifty die within the first year, and one hundred and thirteen during the next four years. Thus two hundred and sixty-three, or *more than one-fourth, die within five years after birth.* Between the ages of five and ten, thirty-five die. During the next five years eighteen more are recorded on the death-list. Hence, at fifteen years of age only six hundred and eighty-five remain out of the one thousand born. When these figures are considered, and the additional fact that out of those who survive very many bear permanent marks of imperfect nourishment or of actual disease, the consequence of

maladies contracted in early life, the importance of our present inquiry—the care of infancy—will be apparent to all mothers.

The younger the infant, the greater the danger of death. *One-tenth of all children born die within the first month after birth*, and four times as many as during the second month.

The mortality is much larger in cities than in the country. In Dublin, during 1867, very nearly one-third of all the persons who died were under five years of age. In the same year forty-three per cent. of those who died in the eight principal towns of Scotland were children below the age of five. In Philadelphia, during the same year, forty-five per cent. of all the deaths were of children under five years of age. In New York fifty-three per cent. of the total number of deaths occur under the age of five years, and twenty-six per cent. under the age of one year.

The danger of death lessens as the period of puberty approaches. Yet, even in the last years of childhood there is a greater liability to disease and a larger proportionate loss of life than during youth or middle age.

CAUSES OF INFANT MORTALITY.

What are the causes of this startling mortality of infant life? Why does one child out of ten die in the first month, and only three out of four live to be five years old? And what are the means of prevention?

Some of the causes which are active in producing this mortality among the little ones cannot be suc-

cessfully opposed after birth. Such, for instance, are imperfect and vicious developments of internal organs existing when born. These malformations often result from inflammation while in the womb, excited by some taint of the mother's blood, or by some agitation of her nervous system. Means of prevention in those cases are therefore to be directed to the mother, in the manner indicated in treating of pregnancy. But other causes of death begin to act only after birth, and are to a greater or less extent avoidable. These are largely traceable to ignorance, negligence, and vice.

One cause of death to which infants are peculiarly liable, and which alone is said to have destroyed forty thousand children in England between the years 1686 and 1799, is being *overlain* by the parents. For this reason, some physicians caution the mother against having the infant in bed with her while she sleeps.

The frightful waste of life caused by bringing children up by hand has been mentioned, and the importance of avoiding it when possible.

The natural feebleness of the system of infants is the reason why they succumb so easily to any malady. Deaths from any given disease are more numerous among infants than children, and among children than adults. Hence the importance of timely corrective measures in infantile affections; hence, also, the need that mothers should know and practise the means best adapted to preserve the health of their frail charges.

These means we shall proceed to give in detail, commencing with directions for

BRINGING UP BY HAND.

We have already alluded to the great danger to the child, particularly in a city, that is artificially fed from birth. But as there are many mothers who are unable, on account of the expense, to have a wet-nurse for the child they cannot suckle themselves, we will give such directions in regard to the diet as are best calculated to lessen the risk invariably incurred under such circumstances.

The child's food should be of the best quality, and prepared with the most scrupulous attention to cleanliness. The milk of the cow is preferable to that of the ass or of the goat, the former of which it is difficult to procure, and the latter having a disagreeable odour. For a child under three months of age, cow's milk should be used as the only food. It should be fresh, and if possible from one cow. When of the ordinary richness, it is to be diluted with an equal quantity of water or thin barley-water. If, however, the first milking can be obtained, which is more watery, and bears a closer resemblance in its chemical composition to human milk, but little dilution will be required. If green and acrid stools make their appearance, accompanied by emaciation and vomiting, the milk must be more diluted, and given less frequently. If the symptoms of indigestion do not yield, milk containing an excess of cream should be used. To procure it, allow fresh milk to stand for two or three hours, and remove the upper third, to which add two or three parts of warm water or barley-

water, after having dissolved in it a little sugar of milk. Should this food also disagree, any of the preparations we are about to mention may be prepared and tried

Professor Falkland recommends the following method of preparing milk for infants, as affording a product more nearly like the natural secretion :— 'One third of a pint of pure milk is allowed to stand until the cream has risen. The latter is removed, and to the blue milk thus obtained about a square inch of rennet is to be added, and the milk-vessel placed in warm water. In about five minutes the curd will have separated, and the rennet, which may again be repeatedly used, being removed, the whey is carefully poured off, and immediately heated to boiling, to prevent it becoming sour. A further quantity of curd separates, and must be removed by straining through calico. In one-quarter of a pint of this hot whey three-eighths of an ounce of milk sugar are to be dissolved ; and this solution, along with the cream removed from the one-third of a pint of milk, must be added to half a pint of new milk. This will constitute the food for an infant from five to eight months old for twelve hours ; or, more correctly speaking, it will be one-half of the quantity required for twenty-four hours. It is absolutely necessary that a fresh quantity should be prepared every twelve hours ; and it is scarcely necessary to add that the strictest cleanliness in all the vessels used is indispensable.'

Dr. J. Forsyth Meigs directs the following article of diet as one which he has found to agree better

with the digestive system of the infant than any other kind of food :—'A scruple of gelatine (or a piece two inches square of the flat cake in which it is sold) is soaked for a short time in cold water, and then boiled in half a pint of water, until it dissolves—about ten or fifteen minutes. To this is added, with constant stirring, and just at the termination of the boiling, the milk and arrowroot, the latter being previously mixed into a paste with a little cold water. After the addition of the milk and arrowroot, and just before the removal from the fire, the cream is poured in, and a moderate quantity of loaf sugar added. The proportions of milk, cream, and arrowroot must depend on the age and digestive powers of the child. For a healthy infant, within the month, I usually direct from three to four ounces of milk, half an ounce to an ounce of cream, and a tea-spoonful of arrowroot to half a pint of water. For older children, the quantity of milk and cream should be gradually increased to a half or two-thirds milk, and from one to two ounces of cream. I seldom increase the quantity of gelatine or arrowroot.'

The egg is a valuable article of food for infants and young children, especially in conditions of debility. It should be given nearly raw, and is best prepared by placing it in boiling water for two minutes. It is then easily digested.

Beef-tea, prepared in the manner described on page 234, is highly nutritious and useful as a food for infants: if it produce a laxative effect, it should be discontinued. When the child shows signs of weakness or of a scrofulous condition its nutrition

will be improved by mingling with its food a small piece of butter or mutton suet.

During the first four or five months the food should be thin, and taken through a teat, thus preventing the stuffing of the infant.

On attaining the age of twelve or fifteen months, infants are usually able to digest ordinary wholesome solid food, neatly and well cooked, when mashed or cut into fine pieces.

An article of food employed for the diarrhœa of infants is prepared as follows:—'A pound of dry wheat flour of the best quality is packed snugly in a bag and boiled three or four hours. When it is taken from the bag it is hard, resembling a piece of chalk, with the exception of the exterior, which is wet, and should be removed. The flour grated from the mass should be used the same as arrowroot or rice.'

Infants nourished by prepared food thrive well enough during cool weather, but during the warm months of the year they are exceedingly liable to bowel complaint, of which large numbers of the spoon-fed infants of cities die each summer season. Hence the importance of taking them into the country; and keeping them there until the return of cool weather lessens the danger of city life.

WEANING.

This should take place when the child is about twelve months of age—sometimes a few months earlier, often a few later. If the mother's health be good, and her milk abundant, it may be deferred until the canine teeth appear—between the fifteenth

and twentieth month. The child will then have sixteen teeth with which it can properly masticate soft solid food.

Time of the year for.—The infant should not be taken from the breast during or immediately preceding warm weather. If the mother, either on account of sickness or failure in her breast-milk, is obliged during the summer to give up nursing, she should at once procure a wet-nurse. If she cannot, the child must be sent into the country. To wean an infant in the city in hot weather, is to expose it to almost certain death.

Proper method.—The process of weaning should be a very slow one. No definite day should be fixed for it. Little by little, from week to week, the amount of spoon-food is to be increased and the nursing lessened—being first given up at night. The breast should never be suddenly denied to a child unaccustomed to artificial food, but be displaced by degrees, by the bottle and the spoon. This gradual change will neither fret the child nor annoy the mother, as sudden weaning always does.

The infant may begin to be accustomed to artificial food at the age of four months. At first, only diluted cow's milk should be given it occasionally between the times of nursing. In a tumbler one-third full of water dissolve a tea-spoonful of sugar of milk; add to the sweetened water an equal quantity of fresh cow's milk; then, if the child's stools are at all green, mix with this two tea-spoonfuls of lime water. Instead of pure water, barley-water made in the usual way, and boiled to the consistency of milk, may be employed in this

preparation—being added, while still warm, to an equal amount of milk. Or, toast-water may be substituted as a diluter of the milk. Cow's milk should not be boiled, if it can be preserved in any other way. As the infant advances in months, some solid food may be allowed. After six months, pap, made with stale bread and tops and bottoms, is proper once or twice a day. Beef-tea, made according to the recipe we have given, and chicken, lamb, or mutton broth, may now also be occasionally taken. As the quantity of milk diminishes towards the close of the first year, the spoon-food should be resorted to more frequently to supply the want. Solid food ought not to be given before the child is a year old.

The breasts usually cause little trouble when the weaning is performed in the gradual manner which has been recommended. The mother should during this time drink as little as possible, refrain from stimulating food, and take occasionally a little cream of tartar, citrate of magnesia, or a seidlitz powder. If the breasts continue to fill with milk, *they should not be drawn.* The 'drying up of the milk' may be facilitated by gently rubbing the breasts several times a day with camphorated oil, made by dissolving over the fire, in a saucer of sweet oil, as much camphor as it will take up. Tea made from the marshmallow has also been recommended for this purpose.

TEETHING.

The period at which the teeth first make their appearance is not a fixed one. It varies consider-

ably even within the limits of perfect health. It may be said, as a rule, that the babe begins to cut its teeth at the age of six or seven months. Quite frequently, however, the first teeth appear as early as the fourth month, or are delayed until the eighth. In some instances children come into the world with their teeth already cut. This is said to have been the case with Louis XIV. and with Mirabeau. King Richard the Third is another example. Shakespeare makes the Duke of York refer to this circumstance in these words :

> 'Marry, they say my uncle grew so fast,
> That he could gnaw a crust at two hours old:
> 'Twas two full years ere I could get a tooth.'

It does not follow that children whose teeth show themselves early, will have, therefore, a quicker general development. Such cases are merely instances of irregularity in the time of dentition, and carry with them no particular significance. Irregularities in regard to the order in which the teeth are cut are also of frequent occurrence.

While, therefore, it cannot be maintained that all healthy children cut their teeth in a certain regular order and time, yet it is certain that those children who follow the general rule which prevails in this respect, suffer least from the difficulties and effects of dentition. As all mothers desire to know at what time they may expect the teeth, we will state the rule of their development in the great majority of cases.

The lower teeth generally precede those of the upper jaw by two to three months.

The twenty milk-teeth usually appear in the five following groups :—

First, Between the fourth and eighth months of life the two lower front middle teeth appear almost simultaneously ; then a pause of from three to nine weeks ensues.

Second, Between the eighth and tenth months of life the five upper front teeth appear, following shortly upon each other, the two central preceding the two on each side of them. Another pause of from six to twelve weeks succeeds.

Third, Between the twelfth and sixteenth months of life six teeth appear nearly at once. They are first the two front grinding teeth in the upper jaw, leaving a space between them and the front teeth which before appeared ; next the two lower front teeth, situated one on each side of the central ones, which were the first to appear ; and, lastly, the two front grinders of the lower jaw. A pause until the eighteenth month now ensues.

Fourth, Between the eighteenth and twenty-fourth months of life the canine teeth cut through (the upper ones are called eye-teeth). Again a pause until the thirtieth month.

Fifth, Between the thirtieth and thirty-sixth months the second four grinders finally make their appearance.

This concludes the first teething The child has now twenty milk-teeth.

We have mentioned that children are sometimes born with teeth. It is also true that sometimes they never acquire any. Instances are on record of adults who have never cut any teeth. Dentition

has been known to take place very late in life. A case is related, on excellent authority, of an old lady aged eighty-five, who cut several teeth after attaining that age.

APPEARANCE OF THE PERMANENT TEETH.

Between the fifth and sixth years of life the second dentition begins. The front grinders are the ones first cut through. Between the sixth and tenth years all the front teeth appear, followed by the canines before the twelfth year. At this time the second grinders show themselves; and finally, between the sixteenth and twenty-fourth year, the wisdom-teeth complete the dental furniture of the mouth.

VACCINATION.

This operation, to which every infant should be subjected, is one of great practical importance. The attempt has been made of late to shake the public faith in its efficacy, and to revive the old fabulous stories and foolish notions as to the production of serious affections of the blood and skin in this manner. At the same time, the increasing frequency and virulence of small-pox are becoming only too evident. We therefore consider it our duty, in treating of the maternal management of infancy, to lay some stress upon the necessity for vaccination as a preservative of life and health. If observation and experience ever taught anything, they have taught the protective power of this operation against the most loathsome and one of the most fatal diseases that ever afflicted the human

race. And that mother who is careless and indifferent in this matter neglects for her children a means of preventing disfigurement and saving life, compared with which all other means are scarcely worthy of mention.

In order to appreciate the value of vaccination, it is only necessary to consider what small-pox was before its discovery,—to look at that disease through the eyes of our fathers and grandfathers. Until the close of the last century it was the most terrible of all the ministers of death. It filled the churchyards with corpses. When Jenner published his great discovery, about seventy years ago, the annual death-rate from small-pox in England was estimated at three thousand in the million of population. In other countries of Europe the rate reached as high as four thousand in the million. And these fatal cases must be multiplied by five or six, to give the entire number of persons annually attacked by the disease. It spared neither high nor low. Macaulay informs us that Queen Mary, the wife of William III., fell a victim to it. Those in whom the disease did not prove fatal, carried about with them the hideous traces of its malignity; for it 'turned the babe into a changeling at which the mother shuddered,' and made 'the eyes and cheeks of the betrothed maiden objects of horror to the lover.' Few escaped being attacked by this fell disease. Nearly one-tenth of all the persons who died in London during the last century died of this one cause. Children were peculiarly its victims. In some of the great cities of England more than one-third of all the deaths among children under ten years of age arose from

small-pox. Two-thirds of all the applicants for relief at the Hospital for the Indigent Blind had lost their sight by small-pox. The number of hopeless deafened ears, crippled joints, and broken-down constitutions from the same cause cannot be accurately computed, but was certainly very large. Vaccination is all that now stands between us and all these horrors of the last century.

Is the strength of this barrier doubted?—Its efficacy is readily proved. In England, during the twelve years (1854-1865) in which vaccination has been to a certain extent compulsory, the average annual rate of deaths by small-pox has been two hundred and two in the million of population. Contrast this with the annual death-rate of three thousand to the million, which was the average of thirty years previous to the introduction of vaccination. Mr. John Simon, medical officer of Her Majesty's Privy Council, one of the best statisticians in England, has collected a formidable array of figures, 'to doubt which would be to fly in the face of the multiplication-table.' From his mountain-height of statistics Mr. Simon says: 'Wheresoever vaccination falls into neglect, small-pox tends to become again the same frightful pestilence it was in the days before Jenner's discovery; and wherever it is universally and properly performed, small-pox tends to be of as little effect as any extinct epidemic of the Middle Ages.'

Are other diseases ever produced by vaccination?—The popular belief would answer this question in the affirmative. All affections of the skin and swellings of the glands noticed in children soon

after vaccination, are attributed by parents in many cases to this operation. They forget that such diseases are met with constantly in infancy and childhood, as often among the unvaccinated as the vaccinated. Observation does not show that they occur with greater frequency among the vaccinated. An English physician has been at the trouble to examine and record a thousand cases of skin disease in children: he found no evidence whatever that vaccination disposes the constitution to such affections. It has been stated with apparent justness, that parental complaints of this kind frequently arise from their unwillingness to believe there is anything wrong in their offspring. Hence, when other diseases follow, vaccination gets blamed for what is really and truly due to other causes. So far from doing any harm to the system, it has been observed in those countries where vaccination has been most thoroughly practised, that, leaving small-pox out of the question, there have been fewer deaths from other maladies. This is especially true of two of the most important classes of diseases, namely, scrofulous affections and low fever. For this reason, some medical statisticians have attributed to vaccination an indirect protective influence against these disorders.

At what *age* should the child be vaccinated?—If the health permit, the operation should always be performed in very early infancy. The chief sufferers from small-pox are young children. One-fourth of all who die from this fatal disease in England are children under the age of one year. In Scotland, where until recently vaccination has

been much more neglected than in England, the proportion even amounted to nearly one-third ; and of these, one-fourth were under the age of three months. The great risk, particularly in large towns, where small-pox is seldom absent, of delaying vaccination is obvious. City children, if hearty, should be vaccinated when a month or six weeks old. Rarely or never ought it to be delayed beyond two or three months. This early period of life is also particularly suitable to vaccination, because the accompanying fever will then be over before the disturbing influence of teething begins.

RE-VACCINATION.

If the first vaccination be found imperfect in character, that is, if it has not properly 'taken, the operation should be repeated at the earliest opportunity. It has been recommended, in all cases, to perform a second vaccination not later than the sixth or eighth year. If small-pox be prevailing, it is proper to vaccinate all who have not been vaccinated within three or four years. In any event, re-vaccination at or after the period of puberty is of extreme importance, It will give additional security even to those whose original vaccination was perfect. In some cases, the susceptibility to small-pox is not wholly exhausted by one vaccination. Inasmuch as it is desirable for every one to escape this disease, even in its most modified form, re-vaccination should always be performed, as it affords a very sure and trustworthy means of such escape. After successful re-vaccination, small-pox, even in its mildest shape,

is rarely met with. In girls especially, in whom the changes which occur at puberty are most marked, re-vaccination should be performed about the age of fourteen.

GROWTH AND DEVELOPMENT.

During infancy the body grows with great rapidity. About the end of the third year one-half of the adult height of the body is attained. After this period growth is more gradual; for in order to reach the remaining half, about eighteen years more are required. At twenty years of age the height is somewhat more than three and a half times that at birth, and the weight about twenty times. Development does not go on at an equal rate in all parts of the body. The lower limbs, small at birth, increase proportionally more rapidly, while the head, relatively large at birth, developes more slowly. The muscular system is gradually strengthened. At the end of the third month the infant is able, if in good health, readily to support its head; at the fourth month it can be held upright; at the ninth month it crawls about the floor; by the end of the year it is able with assistance to step; and between one and two years, at different times, according to its vigor and activity, it acquires the power of standing and walking alone. The periods of greatest and least growth of the child are, on the one hand, spring and summer; on the other, autumn and winter. It has long been known that animals grow more rapidly in the spring than at any other season of the year. This has been attributed to the

abundance of herbage they are then able to obtain. It has been ascertained by actual measurement, that children grow chiefly in the spring.

At six months of age the child begins to lisp, and at twelve months it is usually able to utter distinct and intelligible sounds of one or two syllables. The development of the senses and of the mind proceeds gradually. The sense of hearing is more active and further advanced than that of sight. Sounds are appreciated sooner than light or bright colored objects. The next sense which is developed is perhaps that of taste; then follow smell and touch.

THE FOOD OF INFANTS AND CHILDREN.

The diet of children is frequently improper either in regard to quantity, quality, or variety. In 1867, a committee, of which Professor Austin Flint, Jr., was chairman, was appointed in New York city to revise the 'Dietary Table of the Children's Nurseries on Randall's Island.' In the report rendered, attention was forcibly called to the fact that in childhood 'the demands of the system for nourishment are in excess of the waste, the extra quantity being required for growth and development. If the proper quantity and variety of food be not provided, full development cannot take place, and the children grow up, if they survive, into young men and women, incapable of the ordinary amount of labor, and liable to diseases of various kinds. This is frequently illustrated in the higher walks of life, particularly in females; for many suffer through life from improper diet in

boarding schools, due to false and artificial notions of delicacy or refinement. After a certain period of improper and deficient diet in children, the appetite becomes permanently impaired, and the system is rendered incapable of appropriating the amount of matter necessary to proper development and growth.'

Charlotte Brontë has drawn, in *Jane Eyre,* a graphic and physiologically true picture of the effects upon young girls of long-continued insufficiency of food. Let mothers bear in mind that proper food cannot be too abundantly eaten by children, and that the greatest danger to which they are exposed arises from defective nutrition. We would again urge the value of a large amount of *milk* in the dietary of young people. The disorders of the bowels, which are not uncommon in infancy and childhood, are due to errors in diet by which improper food is supplied, and not to an excess of simple and proper nourishment.

We have already given some directions for the preparation of infants' food in treating of 'bringing-up by hand.' In addition to the various substitutes for the mother's milk there mentioned, we wish to note that known as *Liebig's soup.* This great chemist thus describes the method of making it:

'Half an ounce of wheat flour, half an ounce of malt meal, and seven and a half grains of bicarbonate of potassa, are weighed off. They are first mixed by themselves, then with the addition of one ounce of water, and lastly, of five ounces of milk. This mixture is then heated upon a slow fire, being

constantly stirred until it begins to get thick. At this period the vessel is removed from the fire, and the mixture is stirred for five minutes, is again heated and again removed when it gets thick, and, lastly, it is heated till it boils. This soup is purified from bran by passing it through a fine sieve (a piece of fine muslin), and now it is ready for use.'

Barley-malt can be obtained at any brewery. First, it is separated from the impurities, and then ground in an ordinary coffee-mill to a coarse meal. Care should be taken to get the common fresh wheat-flour, *not the finest*, because the former is richest in starch.

In practice, the troublesome weighing of the materials may be dispensed with, as a heaped table-spoonful of wheat-flour weighs pretty nearly half an ounce, and a like table-spoonful of malt-meal, not quite as heaped, weighs also half an ounce. The bicarbonate of potassa can be obtained from the druggist put up in powders of seven and a half grains, each ready for use. The amount of water and of milk prescribed can be attained with sufficient accuracy by means of the table-spoon; two table-spoonfuls will give the quantity of water (one ounce), and ten table-spoonfuls the quantity of milk (five ounces). These directions will enable any sensible mother to make the preparation without difficulty. The soup tastes tolerably sweet, and, when diluted with water, may be given to very young infants.

Although the method of preparing Liebig's soup is a somewhat tedious one, yet, as it is a combina-

tion which has long been so highly recommended by physicians of the largest experience for having visibly saved the lives of many wasting children, it deserves a trial in all cases in which the ordinary kinds of food disagree.

On page 276 are recorded the directions given by Dr. J. Forsyth Meigs for an article of diet, consisting of gelatine and arrowroot, which he prefers to all other kinds of artificial infant food. Another method of preparing a useful arrowroot mixture is as follows :—

Place a teaspoonful of arrowroot in a porcelain vessel, with as much cold water as will make it into a fine dough ; then add a cupful of boiling milk or of beef-tea ; stir the mixture a little, and allow it to boil for a few minutes until the whole acquires the consistency of a fine light jelly.

The *manner* in which nutriment is administered to infants is not immaterial. The custom of feeding them from a small spoon, or from a cup with a snout, is objectionable. The use of a sucking-bottle most nearly imitates the way in which nature designed the nursling to obtain its nourishment. By the act of sucking, the muscles of the face are exercised in an equal manner, and the saliva is mixed with the food to an extent which is not possible if any other mode of feeding be resorted to. Children drink very readily out of the perforated rubber nipples, which are now so popular for this purpose: they are made to fit over the mouth of the bottle, and are especially to be recommended on account of their cleanliness. The bottle should never be refilled until both it and the rubber cap

have been thoroughly cleansed in warm water. A white glass bottle only should be employed in order that any want of cleanliness may readily be detected. It should be recollected that milk very quickly sours when kept in this way in a warm room: it is therefore better always to empty the bottle and fill it afresh each time it is given to the child, rather than to wait until its contents are exhausted before replenishing it.

We have hitherto been treating mainly of the diet proper for the first year of life. In the second year children may be permitted to have soft, finely-cut meat. Fresh ripe fruit in season ordinarily agrees excellently well. But boiled green vegetables and husk fruits are very apt to cause indigestion and diarrhœa. Fruit for children should be freed from the stones and skins; which latter are indigestible, and often do harm.

As an example of a diet suitable for a child two years of age we append the following:—In the mornings, between six and seven o'clock in summer, or between seven and eight in winter, milk-gruel; between nine and ten o'clock, a piece of wheat bread with a little butter on it; at twelve o'clock, well-prepared beef-tea, or chicken, lamb, mutton broth, or meat with a little gravy; or in place of the meat, a meal-broth prepared with eggs, but with very little fat; green vegetables to be allowed very rarely, and in very small quantities. At this noon meal a mealy well-mashed potato is unobjectionable; so also is rice pudding for a change. In the afternoon, between three and four, bread and milk, with the addition in summer of fresh

ripe fruit ; in the evening, at seven, bread and milk.

It will be observed that this dietetic table calls for five meals a day. Should the child eat so frequently ? We answer yes. But the meals should be at regular intervals. A child, in order to replace the waste of the system, and to furnish over and above sufficient material to build up the growing body, requires a much larger proportionate amount of food than an adult. It also requires its food at shorter intervals. By observing the hours for meals stated above, *regularity*, which is of so much importance to the health of the digestive organs, will be secured. If a young child be allowed only the three ordinary meals of the family, it will crave for something between times, and too often have its craving met with a piece of cake or other improper food. Its appetite for dinner or supper will in this manner be destroyed, and the stomach and the general health suffer.

After the third or fourth year children are able to eat all kinds of vegetables. They may then very appropriately be allowed to eat at the table with the family. It is only necessary to refuse them very salt, sour, and highly-spiced victuals. Of all others they may partake in moderation. Neither wine nor any malt liquor should be given them. Tea and coffee are also, to say the least, unnecessary. They should have a regular luncheon between the meals which are furthest apart. This must be at a regular hour, and consist of bread and butter, with milk or water.

Pains should be taken to see that children do

not fall into the habit of eating rapidly. Too often this pernicious habit, so destructive to healthy digestion, is formed in early life, and becomes the source of that dyspepsia which is the bane of so many lives. Food that is gulped down enters the stomach unmasticated, and unmixed with the secretions of the mouth. A dog may bolt his food without injury, but a human being cannot.

A child should be taught to eat everything that is wholesome, and not be permitted to become finical or fastidious in its appetite. It ought not, however, to be forced to eat any particular article for which it is found that there is an invincible dislike. Variety of diet is good for a child, after the second or third year.

THE POSITION OF THE CHILD WHEN FED.

An infant, no matter how young, should not receive its meals when lying. Its head should always be raised in the nurse's arm, if it be too young to support it itself. The practice of *jolting* and *dandling* the infant after eating is a wrong one. Rest of the body should be secured by placing the child on a bed, or holding it on the mother's knee, for a half hour or so. Observe the inclination which all animals show for repose and sleep after a full repast, and respect the same inclination in the infant.

In our remarks upon bathing we pointed out the importance of the mother herself performing for her child this office. So again, in connection with children's food, we must notice the necessity of the mother being always present at their meals, in

order that they may be taught to take them quietly, with cleanliness and without hurry. Such advice is not needed by the poor nor by women of moderate fortune, who ordinarily have their children constantly under their eyes. But affluence brings with it many occupations which are frequently deemed of more moment than presiding over a child's dinner.

CONCERNING SLEEP IN EARLY LIFE.

There is a natural desire for much sleep during infancy, childhood, and youth ; and there is reason for its free indulgence. Infants pass the greater portion of both day and night in sleep. Children up to the age of six years require, as a rule, twelve hours of repose at night, besides an hour or more in the middle of the day. About the sixth year the noon nap may be discontinued, but the night sleep ought not to be abridged before the tenth year, and then only to a moderate extent until the age of puberty. From this time the period of slumber may be gradually reduced to nine or ten hours. No further diminution should be attempted until the completion of growth, when another hour or two may be taken away, leaving about eight hours of daily sleep as the proper amount during middle life.

It is wrong, therefore, to wake a young child in the morning. It should be allowed to sleep as long as it will, which will be until the wants of the system are satisfied, if it be not aroused by noise or light.

When after a few months the infant is awake a considerable portion of the day, it should be

brought into the habit of taking its second sleep near the middle of the day, say from eleven to one o'clock, and again, from half an hour to an hour, about three o'clock. It should not be permitted a nap later than this in the afternoon, as it would be very apt to cause a disturbed night. Although some physicians recommend that the sleep during the day be discontinued after the infant has attained the age of fifteen months, the wisdom of such advice may well be doubted. As soon as the child begins to walk, not only are its movements very constant and active, but its mind is busily employed and its nervous system excited. It therefore thrives better if its day be divided into two by sleep for an hour or two.

Should the infant sleep alone?—We have mentioned the danger of being overlain to which it is exposed when in bed with its mother or nurse. On the other hand, it must be remembered that an infant keeps warm with difficulty even when well covered, and that contact with the mother's body is the best way of securing its own warmth. Hence, during the first months the child had better be allowed to sleep with its mother. How, then, can the risk of being suffocated, which is no imaginary one, be lessened? The following rules are those given by a physician of reputation, to prevent an infant from being accidentally overlain.

'Let the baby while asleep have plenty of room in the bed. Do not allow him to be too near, or, if this be unavoidable from the small size of the bed, let his face be turned to the opposite side Let him lie fairly, either on his side or on his back

Be careful to ascertain that his mouth be not covered with the bed-clothes. Do not smother his face with clothes, as a plentiful supply of pure air is as necessary as when he is awake. Never let him lie low in the bed. Let there be no pillow near the one his head is resting on, lest he roll to it and bury his head in it. Remember a young child has neither the strength nor the sense to get out of danger; and if he unfortunately either turn on his face or bury his head in a pillow that is near, the chances are that he will be suffocated, more especially as these accidents usually occur at night, when the mother or the nurse is fast asleep. Never entrust him at night to a young, giddy, and thoughtless servant. A foolish mother sometimes goes to sleep while allowing her child to continue sucking. The unconscious babe, after a time, loses the nipple, and buries his head in the bed-clothes. She awakes in the morning, finding, to her horror, a corpse by her side! A mother ought therefore never to go to sleep until her child has ceased sucking.'

When a couple of months have elapsed, the child, if a healthy one, may sleep alone. What the child sleeps in is not a matter of great moment, provided it has a sufficiency of clothing, and be not exposed to currents of air. A large clothes-basket will serve all the purposes of a crib. The mistake is often made of burying the child under too heavy a mass of bed-clothes in a warm room when asleep And this inconsistency is committed by the very mothers who scantily clad the child during the day in order to inure it to the cold. The great transi-

tion from its wrappings by night to those by day is injurious to the health and comfort of the infant.

'In arranging night coverings, the soft feather-bed is very often estimated as nothing; or, in other words, the same provision of blankets is considered indispensable, whether we lie upon a hard mattress or immersed in down. The mother, looking only to the covering laid over the child, forgets those on which it lies, although in reality the latter may be the warmer of the two. An infant deposited in a downy bed has at least two-thirds of its body in contact with the feathers, and may thus be perspiring at every pore, when, from its having only a single covering thrown over it, the mother may imagine it to be enjoying the restorative influence of agreeable slumber. In hot weather much mischief might be done by an oversight of this kind.'

It is of course essential to the health and comfort of the infant that its bed and bed-clothing be kept perfectly dry and sweet. They should frequently be taken out and exposed to the air.

A child should be accustomed early to sleep in a darkened room. Plutarch praises the women of Sparta for, among other things, teaching their children not to be afraid in the dark. He says they 'were so careful and expert, that without swaddling-bands their children were all straight and well proportioned; and they brought them up not to be afraid in the dark or of being alone, and never indulged them in crying, fretfulness, and ill-humour; upon which account Spartan nurses were often bought by people of other countries.'

Position in sleeping.—It has long been a popular opinion that the position of our bodies at night, with reference to the cardinal points of the compass, has some influence on the health. This belief has recently been corroborated by some observations made by a prominent physician, Dr. Henry Kennedy. In an essay on the 'Acute Affections of Children,' published in the Dublin *Quarterly Journal of Medical Science*, he states that for several years he has put in force in his practice a plan of treatment by means of the position of the patient, and often with very marked results. He asserts that, in order to ensure the soundest sleep, the head should lie to the north. Strange as this idea may at first sight appear, it has more in it than might be supposed. There are known to be great electrical currents always coursing in one direction around the globe. In the opinion of Dr. Kennedy there is no doubt that our nervous systems are in some mysterious way connected with this universal agent, as it may be called, electricity. He relates several cases of acute diseases in children, in which, by altering the position of the body so that the patient should lie from north to south instead of from east to west, quiet sleep was induced. This plan of invoking sleep is often successful; but not always so, for all are not equally susceptible. It applies likewise to adults. It is not so striking in its effects on the poorer as on the richer classes of society. This is what might be expected, for it cannot be doubted that the nervous system in the middle and upper ranks is always in a much more sensitive state than with their poorer brethren It

is worth noting, that even in healthy persons sleep will often be absent or of a broken kind, from the cause of which we are now speaking. It is very common to hear people saying they can never sleep in a strange bed. Although many causes may conspire to this, Dr. Kennedy cannot doubt that amongst these ought to be placed the one to which we are now drawing attention.

THE CLOTHING OF INFANTS AND YOUNG CHILDREN.

A fertile cause of disease and death is to be found in the negligence or ignorance displayed in regard to the dress of children. And it is not the poorly attired, but nearly always the fashionably robed child, which suffers the most. To parental vanity can be traced many a catarrh on the chest or the inflammation of the bowels which has resulted in death. Most mothers appear to be ignorant of the fact that children are exceedingly susceptible to the influence of cold. The returns of the Registrar-General of England show that a very cold week always greatly increases the mortality of the very young. While adults carefully protect themselves against every change of the weather, and against currents of air, children, who most need such protection, are too often neglected.

The warmth of the infant's body is best secured by that of the nurse, and by warm clothing. It is more effectually and healthfully provided for in this manner than by confining the child to a warm atmosphere. Young children should never be dressed *décolleté*—in low necks and short sleeves

That fashion is a dangerous one which leaves the neck, shoulders, and arms uncovered. To this irrational custom may be traced a vast amount of the suffering and many of the deaths of early life; doubtless, also, in many cases it lays the foundation of consumption, which manifests itself a little later. But, it is said, the child will be 'hardened' by having its chest and limbs thus exposed. The surest and safest way to harden the child is to so care for it that it shall pass through its first months and years of life without any ailment. Every mother should see to it, that her charge is so clothed that every part of the body is effectually protected from dampness and cold. She can then best secure for it a hardened constitution by carrying it daily into the sunlight of the open air.

The material of the clothing should be such as will unite lightness with warmth. Flannel and calico are therefore to be preferred. At first, as the skin of the child is very delicate, a shirt of fine linen may be interposed between it and the flannel. But, after the first few months, the gentle friction of fine soft flannel next the skin is desirable, as it stimulates the circulation of the blood on the surface of the body, and promotes health. Flannel under-clothing should be continued all the year, during the summer months a very light texture being used. When the dress of the child is shortened, care must be taken that the feet are well covered with soft stockings of cotton or woollen (which in winter should extend up above the knees), and with light leather shoes.

The *night-dress*, at least during cold weather, is

best made of flannel, thin or thick according to the climate. It has been recommended that, after the child is somewhat advanced, the night-clothes be constructed in the form of night-pants, so that it may not be exposed if the bed-clothing be thrown off. Every article of dress worn during the day ought to be removed at night.

The rule in regard to the *quantity of clothing* is, that it should be in sufficient amount to preserve due warmth. It must therefore be regulated by the season of the year and the state of the weather. We have mentioned the fatal practice of leaving bare at all seasons of the year the upper part of the chest and arms of the little one, while the rest of the body is warmly clad. We can scarcely speak too emphatically nor too often of the danger to which the mother thus exposes that life, which it is her duty to wisely and safely conduct through the period of dependent infancy and childhood. It is of course possible for the child to be too closely enveloped, and the skin thus rendered highly susceptible to the impressions of cold. The prevalent error, however, at the present time, is in the direction of too scanty clothing.

The make of the dress should be loose and easy, so as to permit of the free movement of all portions of the body ; it should be cut high in the neck, and with sleeves to the wrists ; its construction should be simple, so that it may be quickly put off and on ; and the fastenings employed should, as far as possible, be tapes, not pins. In the clothing of children the laws of hygiene, and not the code of fashion, should direct the shape and style.

THE BATHING OF INFANTS AND YOUNG CHILDREN.

Many advantages attach to the daily use of the bath for infants. It secures cleanliness, strengthens the nervous system, and preserves from colds and coughs.

We have already endeavoured to impress upon the mind of the reader the great susceptibility to cold which exists in early life. On this account the water for the bath should be warm (96° or 98°) for the first few weeks of infancy, especially during the winter season. Gradually the temperature may be reduced to that of the apartment, never to actual coldness. It is as foolish and hazardous to attempt to 'harden' infants by plunging them into cold water, as it is by carrying them with uncovered necks, chests, and limbs into the keen and damp air. Knowledge of these facts would bring safety to many children who now suffer, because of the dangerous ignorance of mothers in regard to the susceptibility of the infant organisation.

An infant should be immersed in its tub every morning. Besides the regular morning bath, it is often advisable to put the child for a few minutes in tepid water in the evening. This will quiet the nervous system, and induce sleep. The bath should not be too long a one, for fear of exciting perspiration; nor, for the same reason, should the water be too warm. If the child be of a delicate constitution, the evening bath will be especially useful, and can be made more so by the addition of two table-spoonfuls of salt to the water necessary for the bath.

The time immediately after nursing or feeding is not proper for bathing. An hour or two after a meal should be allowed to elapse. Neither should a bath ever be given in a cold room. Even in a warm atmosphere, care should be taken, both after and during the ablution, that the wet skin of the infant be not exposed to the air. Its body should be completely immersed ; it should not be held up out of the water, nor, if it be old enough, allowed to stand or sit in the tub. It is well also to have a warm blanket in which to receive the child as it comes dripping from the bath. It should be wrapped up in this for a few minutes, to absorb a part of the moisture. Then a portion of the body should be uncovered at a time, and dried before exposing the rest.

Drying the skin.—For this purpose a piece of soft flannel will be found serviceable. By gently rubbing the surface of the body with it the skin will be warmed and stimulated, and the resulting glow will be as agreeable to the child as is that in the adult which follows the Turkish bath. The actual grooming of the human body is very useful to improve the health of scrofulous children.

At first from three to five minutes will be a sufficiently long immersion. In a little while, however, this period may be lengthened, all the precautions mentioned against injurious exposure being observed.

The lukewarm daily bath, taken either in the morning or evening, ought to be continued until at least the age of four years. If, after the fourth or fifth year, ablutions of the entire body be

resorted to only every second or third day, the practice should be commenced of sponging the chest every morning with cold, or alternately with cold and hot water, followed by brisk frictions.

Soap is to be used but sparingly in the bath of young children. It must be of the blandest and purest quality. Various eruptions are caused by the employment of impure soaps, and even by the excessive application of the best kind.

In illustration of the importance of our present subject, we may state that Dr. Hufeland, to whose admirable work on the art of prolonging life we have before alluded, lays down, as one of the means which lengthen life, the care of the skin. He dwells upon the benefit of paying such attention to it from infancy that it may be kept in a lively, active, and useful condition.

The power of the bath to ward off disease in childhood is not sufficiently appreciated by parents. Properly managed, it soothes, but never increases, any internal irritation which may exist, and often does away with the necessity of resorting to the administration of drugs. If due attention were paid to the condition of the skin in early life, many of the most common ailments of childhood would be averted. The daily employment of the bath, and scrupulous attention to cleanliness of the person and clothing, would materially lessen the demand both for purgative medicines and for soothing syrups.

One word more in regard to the washing of the infant. The mother herself, if she be in health, should always perform this office, and not entrust

it to the child's nurse. Plutarch awards high praise to Cato, the censor, for his invariable custom of being present when his child was washed. Every mother, at least, would do well to follow the example of this old Roman. It will give her the opportunity to detect many incipient affections which would for a long while escape her attention if she saw the child only when dressed. The mother will also take pains to engage the mind of the little one, and render the bath a source of amusement to it.

After the fourth or fifth year, two or three baths a week during the colder seasons of the year will be sufficient to keep the skin clean, and properly active. During the summer, however, a daily bath is of great advantage to children, and ought not to be neglected.

Swimming is very useful and very invigorating to the health of both sexes. It is desirable that children be taught this art.

The importance of the *culture of the skin* to the well-being of infancy and childhood cannot be brought too prominently to the notice of all mothers. We have therefore endeavoured to give some useful hints in regard both to the preservation of its cleanliness, and to the prevention, by means of garments and warming, of its exposure to too great changes of temperature.

By proper attention to the skin in the manner pointed out, many of the eruptions with which children are afflicted might be prevented. The appearance of these the mother ought to regard as a great calamity, for they are often difficult of cure,

and render the child an object of disgust. She ought also to look upon them as the mischievous consequences of the neglect of those laws of health which it is her duty to learn and observe.

AIR AND VENTILATION IN CHILDHOOD.

Fresh air is necessary for the robust development of infancy and childhood. Infants born in the summer season should be carried out daily when the weather is pleasant, from the second or third day after birth. Those born in the winter should be kept in the house for two or three months before being introduced to the outer world on some sunny noonday. Older children can scarcely pass too much time in the open air.

A change in the dress must, of course, be made before exposing the child to the out-door air. The head should be covered, and the chest and limbs well protected from the cold.

As a rule, a child ought to be carried out, or permitted, when old enough, to walk out, at least once every pleasant day during the year. The time of the day is to be varied with the season. In the winter, the middle of the day is to be chosen; in summer, the early portion of the forenoon, a few hours after sunrise.

Children show very quickly, even when in ill-health, the beneficial results of a ride or walk. It quiets the irritability to which they are liable, more effectually than any other procedure. For a delicate child, or one recovering from sickness, fresh air and sunshine are the best tonics which can be administered. A fretful, peevish child will soon

learn to look forward to its daily jaunt on the street or road, and will be quieted by it for the rest of the day.

At all times of the year regard must be had to the state of the weather. The infant ought never to be taken out on a wet day. Exposure to a damp atmosphere is one of the most powerful causes of catarrh on the chest and inflammation of the lungs, to which young children are so subject. A very high wind, even though the day be bright and dry, is injurious to a young infant, as it has been known to suspend its breathing for a time, which accident might, if not at once observed, bring about a fatal result.

Besides fresh air, *light* is an indispensable requisite to the health of children. Nothing can compensate for the absence of its beneficial effects. It is to be remembered, however, that during the first week or two the eyes of the new-born babe are not strong enough to bear the full glare of light. The first eight days of its existence should be spent in a half-darkened room. Gradually the apartment may be brightened, until finally, after about two weeks, the young eyes become entirely accustomed to the light, and may be exposed to it without injury. A neglect of this precaution is one of the most common causes of the bad inflammation of the eyes so frequently met with among young infants. After the sight has become quite strong, a bright room will strengthen the eyes, not weaken them; for light is the natural stimulant of the eye, as exercise is of the muscles, or food of the stomach.

Scrofulous diseases are the heritage of those children who are deprived of a plentiful supply of pure air and light. A distinguished writer upon the laws of health ascribes to the careful avoidance of the salutary influence of air and light by so many young girls, who are fearful of walking out while the sun is powerful, much of their sickly appearance, the loss of consistency of their bones, and their being able to afford but a deformed temple to the immortal soul.

Humboldt states that, during a five years' residence in South America, he never saw any national deformity amongst the men or women belonging to the Carif, Muyscas, Indian, Mexican, or Peruvian races. If parents in our own country were to accustom their daughters from an early age to daily exercise in the open air and sunlight, there would be fewer weak backs requiring the support of apparatus from the surgical-instrument maker, and less pallor in lips and cheeks to be remedied by iron from the shop of the apothecary.

EXERCISE IN CHILDHOOD.

The first exercise which a child obtains, is had of course in its nurse's arms. Are there any directions, then, to be noticed in regard to the *manner of carrying an infant?*—Dr. Eberle gives the following useful advice upon this subject:—'The spine and its muscles seldom acquire sufficient strength and firmness before the end of the third month to enable the child to support its body in an upright position without inconvenience or risk of injury. Until this power is manifestly acquired, the infant should not

be carried or suffered to sit with its body erect, without supporting it in such a manner as to lighten the pressure made on the spine, and aid it in maintaining the upright posture of its head and trunk: therefore, at first (a few days after birth), the infant should be taken from its cradle or bed two or three times daily and laid on its back upon a pillow, and carried gently about the chamber. After the third or fourth week, the child may be carried in a reclining posture on the arms of a careful nurse, in such a manner as to afford entire support both to body and head. This may be done by reclining the infant upon the forearm, the hand embracing the upper and posterior part of the thighs, whilst its body and head are supported by resting against the breast and arm of the nurse. When held in this way, it may be gently moved from side to side, or up and down, while it is carefully carried through a well-ventilated room.'

After the child is three months old, it will probably have become strong enough to maintain itself in a sitting position. It may then be carried about in this upright posture, with the spine and head carefully supported by the nurse, which aid ought not to be withdrawn until the age of six or seven months.

'In *lifting* young children,' as has been well observed by Dr. Barlow, 'the nurse should be very careful never to lay hold of them by the arms, as is sometimes thoughtlessly done; but always to place the hands, one on each side of the chest, immediately below the armpits. In infancy the sockets of the joints are so shallow, and the bones so feebly

bound down and connected with each other, that dislocation and even fracture of the collar-bone may easily be produced by neglecting this rule. For the same reason, it is a bad custom to support a child by one or even by both arms, when he makes his first attempt to walk. The grand aim which the child has in view, is to preserve his equilibrium. If he is partially supported by one arm, the body inclines to one side, and the attitude is rendered most unfavorable to the preservation of his natural balance; and consequently, the moment the support is in the least relaxed, the child falls over and is caught up with a jerk. Even when held by both arms, the attitude is unnatural and unfavorable to the speedy attainment of the object. To assist the child, we ought to place one hand on each side of the chest in such a way as to give the slightest possible support, and to be ready instantly to give more if he lose his balance. When this plan is followed, all the attitudes and efforts of the child are in a natural direction; and success is attained not only sooner, but more gracefully, than by any ill-judged support given to one side.

"There is one very common mode of exercising infants, which we think deserves particular notice: we mean the practice of hoisting or raising them aloft in the air. This practice is of such venerable antiquity, and so universal, that it would be vain to impugn it. The pleasure, too, which most children evince under it, seems to show that it cannot be so objectionable as a cursory observer would be disposed to consider it. Still there are hazards which ought not to be overlooked. The risk of accident

is one of some amount: children have slipped from the hands, and sustained serious injury. Some people are so energetic as to throw up children and catch them in descending. This rashness there can be no hesitation in reprobating; for, however confident the person may be of not missing his hold, there must ever be risks of injury from the concussion suffered in the descent, and even from the firmness of the grasp necessary for recovering and maintaining the hold. The motion of the body, too, has a direct tendency to induce vertigo; and when the liability of the infant brain to congestion and its consequences is considered, when the frequency of hydrocephalus in infants is borne in mind, an exercise which impels blood to the brain will not be regarded as wholly insignificant. There is one more objection which seems not to have attracted attention. The hold taken of the child in the act of hoisting him is by the hand grasping the chest. The fingers and thumb, placed on each side of the breast-bone, compress the ribs; and any one with the hand so placed will at once perceive that if the pressure were strong, and the resistance from the elasticity of the ribs weak, the impression on the chest resulting would correspond exactly with the deformity named chicken-breast. That any force is ever used capable of inducing speedily such a change, is in the highest degree improbable; but that reiterated pressure of this kind, however slight, would in a weakly child have power to impress and distort the chest, few, we imagine, will doubt."

LEARNING TO WALK.

When two or three months old, the infant may be placed on a soft mattress upon the floor or on the carpet. He can then toss his limbs about without danger, and develope the powers of his muscular system.

'The best mode of teaching a child how to walk,' says Dr. Bull, 'is to let it teach itself; and this it will do readily enough. It will first learn to crawl: this exercises every muscle in the body, does not fatigue the child, throws no weight upon the bones, but imparts vigor and strength, and is thus highly useful. After a while, having the power, it will wish to do more. It will endeavor to lift itself upon its feet by the aid of a chair; and though it fail again and again in its attempts, it will still persevere until it accomplish it. By this, it learns first to raise itself from the floor; and secondly, to stand, but not without keeping hold of the object on which it has seized. Next it will balance itself wit out holding, and will proudly and laughingly show that it can stand alone. Fearful, however, as yet of moving its limbs without support, it will seize a chair or anything else near it, when it will dare to advance as far as the limits of its support will permit. This little adventure will be repeated day after day with increased exultation; when, after numerous trials, he will feel confident of his power to balance himself, and he will run alone. Now time is required for this gradual self-teaching, during which the muscles and bones become strengthened; and when at last called upon to

sustain the weight of the body, are fully capable of doing so.'

It is not merely want of strength which prevents an infant from walking at first. The natural shape of the legs renders it impossible. The feet are turned in so that the inner sides look upwards. When placed upon its feet, therefore, the soles will not rest upon the ground. In a short time the position of the feet changes, and they become fitted for the purposes of support and locomotion. When he begins to walk, the child should have shoes with tolerably broad soles, which ought to be at least half an inch longer than the foot.

The first efforts of the little one to support and propel itself are to be carefully watched, but not unnecessarily interfered with; neither frightened by expressions of fear, nor rendered timid by too frequent warnings.

ADVANTAGES OF GAMES AND PLAYS.

The first seven years of life should be one grand holiday for all sports and amusements which will bring into play the muscles, and divert at the same time the mind. Time cannot be more usefully employed than in thus laying the foundation of health, upon which alone can rest the physical, mental, and moral wellbeing of after-life.

No greater mistake can be made by parents than to deprive the young of the innocent pleasures of childhood. Yet there are persons occasionally met with who think it their duty to check the natural lightness and gaiety of heart of their children for fear that they shall become too fond of pleasure.

In this way great harm is done to both mind and body, and the very fault created which it is desired to avoid.

The wise parent sees in the games and plays of childhood not only necessary recreation and exercise, but a valuable means of education—of moral, mental, and physical training. He also seeks to impress early upon the young mind that play is most enjoyed when it has been earned by work, and that pleasure flies from those who continually pursue it.

The faculties of *memory* and *attention* can be called upon and developed by proper games in a most satisfactory manner. These exercises are all the more effective because the pleasure conceals, as it were, the mental labor, and the intellectual efforts are made, in a sense, unconsciously, though none the less efficiently.

Certain plays form a valuable means of educating the eyes and other senses. Such, for instance, are the toys which represent objects of natural history or of different trades and arts; the pictures which teach through the quick eye of the child what no dry descriptions could ever convey; and the games which develope closeness of observation and habits of order. A genial French physician has happily said, 'Every time I see a toy based on the reproduction of a scientific fact or of an industrial process, and which pleases while it enlightens, I feel a sentiment of real gratitude to him who has designed it.'

We are glad to see that each year more and more attention is being paid to the utilization, as it

were, of the games of infancy. Although all education can never be made a play, all play can be made an effective education. Do not therefore, reader, restrict the games of your children, but direct them; do not render them less amusing, but seek to make them more instructive.

The schooling afforded by instructive plays should be the only schooling of the first seven years of life. Late springs produce the most abundant harvests in the mind as in the field. Precocious and delicate children especially should be kept from a too early and close application to books. By means of healthful and instructive games and sports; by visits to workshops and factories where familiar objects are made; and by a cultivation of the sense of the beautiful in nature and art, more can be done towards securing a sound mind in a sound body than by the easier and more common method of sending the child to school almost as soon as it can walk.

IMPORTANCE OF TEACHING CHILDREN HYGIENIC HABITS.

The force of habits should never be lost sight of by those having the charge of children. They constitute a power of which parents should early avail themselves. J. J. Rousseau has said, 'The only habit which one ought to permit the child, is of not contracting any.' But this is impossible and undesirable. When it is remembered that *a good habit is just as hard to break as a bad one*, the importance of seeking from the very cradle to frame good

habits is evident. It is easy to create, but difficult to reform. What then are some of the principal hygienic habits which it is desirable to teach children?

First we will mention, *a liking for proper food at regular times.* The indigestion, or weakness of digestion, from which many children suffer, is in some cases hereditary or the result of feeble health. But most frequently it is the effect of bad management. The giving to the child of pastry and cakes at meals instead of simple and nutritious food, the encouragement of capriciousness of appetite instead of teaching it to like everything that is healthful, and the neglect to inculcate the habit of eating at regular hours, these are the principal causes of many cases of diarrhœa, vomitings, weak appetite, colicky pains, and indigestion among children.

The daily use of at least a sponge-bath of the entire person is an excellent habit. Cold water should be employed after the fifth or sixth year. This simple practice of a cold sponge-bath every morning, if more generally taught children, would avert many a cold and rheumatic attack in after life.

The habit of quenching the thirst with only simple drinks, milk and water, should be early and thoroughly formed. No American mother would think of giving spirits to her child, excepting under medical advice; but many permit almost from infancy the use of tea and coffee. These drinks are not only unnecessary in childhood, but to a certain extent injurious. They excite the nervous system and disorder the digestion. Before the

age of puberty, neither tea nor coffee should be allowed.

ON THE TRAINING OF THE SPECIAL SENSES.

The special senses, sight, hearing, smell, taste, and touch, have been called the windows of the soul, by which it observes what passes without. The most noble and intellectual of these are the sight and hearing. Neither of them receives the attention at the hands of parents and educators which it should. Indeed, the Indians who yet inhabit our western plains, have better eyes and ears than we. The reason of this is evident. The savage is obliged to make other use of his eyes than to dreamily admire the beautiful landscape, and other use of his ears than to listen to the singing of birds and the murmuring of wind and stream. These senses are the defenders of his life. He depends upon them for food, clothing, and protection against his enemies. Hence, urged by necessity, he trains them from infancy, and brings them to a perfection which astonishes us. It will be said, however, that we in our civilized life, have no need of any such acuteness of sense. True, but we cannot avoid the consciousness that our organs of sight and hearing do not afford us the service they ought, and that they commence to fail us too early. The remedy is to be sought in the training of the special senses in early life. These senses, which are the first of our faculties to form and develope, should be the first to be educated; yet, as has been well said, they are nearly the only ones which are forgotten, or at least they are the most neglected.

The education of a sense has been compared to the education of a child,—it has its physical, its intellectual, and its moral side. It is necessary to maintain the organ in a condition of health in order that it may perform its work well; this is the physical education of the sense. The mind must learn to properly elaborate the impressions thus conveyed to it, this is the intellectual education of the sense Finally, in the service of morality and justice, these impressions ought to be turned to the advantage of the good and the beautiful, this is the moral education of the sense. The subject of the training of the special senses is therefore, when properly viewed, a serious and most important one. It might well demand more attention at our hands than we have space to give it here. We will make our remarks as concise and practical as possible commencing first with

THE TRAINING OF THE SENSE OF SIGHT.

A recent French writer on the hygiene of the sight has brought forward striking evidence in support of his statement, that in our time the sense of sight is growing markedly weaker. The number of the near-sighted is augmenting, as is also the number of those who become 'far-sighted' before old age. Cases of debility and disease of the eyes seem to be multiplying at a rate which should awaken general attention to this matter. The causes are to be found in the neglect, often the hurtful management, of the eye-sight of children; in the influence of improperly regulating artificial light;

and in the injury done by bad printer's ink and paper.

In the education of the child's eyesight, *acuteness* of vision is one of the first objects to be sought for That this is largely a matter of training is apparent from the fact that persons in certain professions can readily distinguish objects too small or too distant for ordinary eyes. Children brought up in the country or at the sea-side, have a power of vision unknown to city children, with their limited range of observation. But it is not only necessary that the eyes should be able to make out the forms of distant or small objects, but that they should be quick to detect shades of color and delicacies of outline. The child should be stimulated and encouraged to make efforts in this direction. Here, also, there is room for the skill of the intelligent toy-maker, for toys can be made very useful educators.

One of the forms of sensorial *memory* which it is most desirable to develope is that of objects seen, that is to say, the fixing in the thoughts, to be brought up before the mind's eye when wanted, the recollection of visual impressions. This embraces the memory of forms, of dimensions, of the relations between various objects and between different parts of the same object, and of colors. When applied to places it is what is known as *local* memory, applied to the human face, it is the memory of *physiognomy;* applied to objects, it is *graphic* or *descriptive* memory; applied to colors, it is *chromatic* memory.

Local memory is sometimes developed to an ex-

traordinary degree. It is only necessary for some persons to have once traversed a locality, a street, a city, in order to preserve of it a most minute and vivid recollection. This topographical memory is enjoyed by a number of the inferior animals; the elephant, the dog, and the horse, for instance, are well-known as being capable of noticing a road taken and of returning by it, of recognising readily a place once seen, and of showing a tendency to stop of their own accord at places where they have been arrested or kept. This local memory, useful as it is to every one, is necessary to the painter who draws upon it for the elements of his artistic creations.

The faculty of recollecting faces is a peculiar one, and possessed by different persons in vastly different degrees. There are those who recognise invariably every face they have once seen, and who by a simple effort can at any time recall with the utmost distinctness the features of the absent. On the other hand, there are those so wanting in this special form of memory that they are constantly exposed to serious social inconveniences, and, for fear of failing in politeness, often salute perfect strangers. The ancient Greeks possessed to an extraordinary degree the power of seizing and retaining types of face and form; it is to this, doubtless, that they owe, to a great extent, their unapproached excellence in sculpture and painting.

Graphic or *descriptive* memory is that which photographs, as it were, upon the brain the visual impressions that objects have made upon the retina, in such a manner that the thought can reconstruct

them ideally. This, in particular, is the form of memory required by designers of all kinds, and, like the other forms of visual memory, is susceptible of education. The child is first taught to copy with his pencil and produce exact *imitations* of the objects about him. Then, little by little, he is to be taught in closing his eyes to reconstruct mentally the contours of objects, at first simple, then more complicated, and finally to penetrate into their details and give to the fictitious mental image all the relief of reality. This exercise not merely trains the child in correct observation, but quickly leads to the conquest of descriptive memory.

Chromatic memory, or the memory of colors, is a form of visual memory different from those we have enumerated. It is more difficult, perhaps, and technical than the others. The attention of the child should early be directed to the colors of natural and artificial objects, and he should be encouraged to imitate them.

But it is not our intention to go further into this important subject, the education of the sense of sight. Our space will not permit it. By these few elementary remarks, we have merely wished to remind parents that they can do much towards the development of this important faculty in their children.

TO PREVENT NEAR-SIGHTEDNESS.

Near-sightedness is, as we have said, greatly increasing. In Germany, this is particularly the case, and has led there to a careful study of the subject within the last few years.

Near-sightedness, like most of the disorders of the eyesight, is to be traced to causes which act during childhood, *and which causes are all entirely preventible.* Imperfect lighting of rooms in which children study or play is one of the chief among these preventible causes. When the windows are improperly constructed or placed, or when the artificial light is faulty in school-rooms, the book is naturally brought close to the eyes in order that it may be more easily read. The consequence of this is either that near-sightedness is quickly produced, or that the eyes soon become fatigued and permanently weakened. No less injurious is the effort to read 'between the lights' or before the fire. School-books with too small type, and school-desks which are too low or too far from the seats, are the direct cause of much mischief to many young eyes. Let parents, therefore, see to it that the school-rooms to which they send their children are clearly and properly lighted, that the books which they study are printed in a bold, clear type, and that no reading or study is permitted by a flickering or a dim light, nor before a desk or table which forbids a tolerably erect position of the head and shoulders.

THE EDUCATION OF THE SENSE OF HEARING.

The education of this sense is second only in importance to that of the sight. First of all, attention should be directed to the preservation of the *health* of the organ.

Many cases of deafness among children originate

in long standing diseases of the nose and throat; others in obstinate skin affections; while not a few are caused by a want of cleanliness, which permits of the accumulation of wax in the passage of the ear.

The sensibility of the nerve which conveys impressions of sound from the ear to the brain can be greatly increased by exercise and training, when the organ is in a condition of health. It can be so highly developed that the ear will readily catch very feeble sounds.

A learned physician has recently pointed out with some force that sufficient attention is not paid to the conformation of the pavilion of the ear. Upon this conformation much of the delicacy of hearing depends. The hats which children wear, usually compress and deform the pavilion. Physiologists have shown that it ought to make an angle of about thirty degrees with the skull, in order to best collect sonorous vibrations. This angle is very much diminished by our artificial head-dresses, and to the detriment of acuteness of hearing.

Can education do much for the improvement of hearing? Every day experience answers in the affirmative. There is an exercise which cannot be too highly commended to parents, which consists in inducing in play their children, even those very young, to detect from as far as they can faint and fading sounds. It is a game which amuses them much, and it is a pleasing sight to see the rivalry of several young children, each of whom with head bent forward, is earnestly trying to distinguish a receding sound longer than its fellows. A little

ingenuity will readily devise amusing and useful plays with this object in view.

The training of the remaining special senses is of comparatively minor importance to that of those we have been considering, and need not detain us. We will only remind the reader of the wonderful adroitness and delicacy of touch possessed by the blind as an example of what this sense is capable of when educated.

HOME MANAGEMENT OF SOME COMMON DISEASES OF CHILDREN.

CROUP.

Although this disease is said to be more severe in Europe than in our own country, and more frequent in our northern than in our southern States, most American mothers, in all parts of the country, know and dread its alarming and often fatal attacks. It is a disease of childhood, but not of early infancy, being rarely met with under the first or after the tenth year of life.

Children who have once had this affection are very liable to another attack upon exposure to any of the causes which excite it. It has been noticed also that croup runs in certain families, and not unfrequently, children of a ruddy complexion and of a fleshy and apparently vigorous appearance are those most subject to it.

Among the *causes of croup*, which should be specially guarded against by mothers of croupy children, are checking of the perspiration, sudden alterations in the dress, change of climate, and even

in some cases a residence at the sea-side. Croup also often follows measles, and at times is epidemic.

The unmistakeable *symptoms of croup* quickly show themselves at the outset of the disease. Sometimes a sore throat, a short, dry cough, and a slight harshness of breathing, usher in the affection; in other instances, that which first attracts attention is hoarseness in the cry or tone of the voice, attended with, or quickly followed by, feverishness, thirst, and dulness, or fretfulness; while in another class of cases the disease suddenly developes itself without any noticeable premonitory signs. In all these cases the characteristic symptoms of the disease commonly make their appearance at night. The child's sleep is disturbed by a peculiar clanging cough, which, when once heard, will ever afterwards be remembered and easily recognised. The skin becomes hot and dry, the breathing difficult, the cough more frequent, and the child is soon awakened, frightened, and struggling for breath. With flushed face and staring eyes, the little sufferer starts up, grasping the throat with the hand as if seeking to remove some encircling pressure which is choking it. Each drawing in of the breath is attended with a hissing sound, the redness of the face and neck increases, and speech becomes impossible. This attack may pass off in a few minutes, or be prolonged, with varying degrees of intensity, for an hour. Almost invariably, however, it is followed by a period of relief, in some instances so complete as to deceive the anxious relatives into the belief that the disease is over and the child safe. This false confidence is, unfortunately, generally soon rudely

dissipated by a return of the attack in all its first violence.

The disease attains its height by the end of the second, or at the latest the close of the third day. The fever is now the hottest, the tongue becomes white, the face and forehead red and covered with perspiration, the lips at times purple, the veins of the neck and temples distended, the countenance distressed, and the voice whispered or suppressed. The cough is now also most frequent and noisy; its peculiar sound has been compared to that made by a fowl when caught in the hand. The thirst is great, but swallowing difficult. The child often inserts its fingers in the mouth as if trying to clutch something which closes the air passages. These symptoms may either increase to the rapid exhaustion of the patient or take a favorable turn. One of the first evidences of the latter is a change in the character of the cough, which, although it may not lessen in force or frequency, becomes lower in tone, less dry, and finally moist.

The *treatment* should be most prompt, active, and energetic. Few diseases require, for the safety of the patient, such quick and efficient aid at the outset. Prepare at once sufficient hot water for a bath, and make a fire in the room. In the meanwhile, immerse the child's arms in some hot water, and apply cloths, wrung thoroughly dry from it, to the throat. Give the child a teaspoonful of powdered alum in a little syrup, molasses and water, or honey. Repeat the dose in a quarter of an hour if full vomiting be not excited by the first teaspoonful. So soon as the warm bath is ready (the water

should have the temperature of 98° Fahrenheit), place the child in it, and keep up the heat of the bath by the occasional addition of hot water. Have hot towels in readiness to dry the skin completely, and a warm blanket in which to wrap the patient. See that the temperature of the room is raised to about 66° Fahrenheit, and that it does not fall below this. Moisten the air by putting a kettle of boiling water on the fire and diffusing the steam from it by means of a long roll of paper fixed to the spout.

The warm bath and the emetic will usually relieve the breathing; but no matter how complete this relief may appear to be, nor how quietly the little one may sleep, it must be carefully watched all night, so that the first return of unfavorable symptoms may be promptly treated. In all instances also, however favorably the case may progress, the patient must be confined to bed for several days, and the temperature of the room, and the moisture of the air, carefully maintained, as directed for the first treatment of the attack. If the child has had previous attacks, or if the weather be cold and inclement, it should be kept in this warm moist atmosphere for two weeks. Were these precautions known and heeded we should have to lament fewer fatal cases of croup.

Of course in this, as in all other serious diseases, skilled medical advice should be secured as quickly as possible. We have given the above directions, not only for those so situated that they cannot secure medical aid, but also for all others, in order that no valuable time may be lost in commencing

the treatment, that the efforts of the physician may be intelligently seconded and carried out, and that the importance of *promptness* at the outset, and *prolonged care* during convalescence, may be impressed upon every mother who consults these pages.

HEAD COLDS.

Young infants are very liable to take cold when being washed, or carried about the house into rooms and passages of different temperatures. This cold often shows itself by sneezing and "snuffles" in the nose. In a short time a discharge from the nostrils appears, the eyes become watery, and the voice sounds "through the nose." The skin is hotter than natural, and the infant cross. If the child be able to talk, it will complain of headache, some soreness in the limbs and back, and of a burning, uncomfortable feeling in the nose. These symptoms last for three or four days, when in mild ordinary cases they begin to disappear. After one or more attacks of this kind the child is very liable to a return on every slight exposure to cold.

The *treatment* required in these cases is mild and simple, but must not be neglected. A warm bath should be taken at bed-time for a number of days; the patient should be kept in an even temperature and out of draughts. The best relief to the distress in the nose, from which the child suffers, is afforded by dipping a hollow sponge in hot water, squeezing it nearly dry, and applying it over the nose and forehead. The common domestic practice of greasing the nose is also beneficial. The wearing of a flannel cap until the disease is cured

is a remedy strongly recommended by the late Dr. Meigs. A flannel cap will also often prevent the recurrence of the complaint in those very subject to it.

FITS.

Infants and young children are much more liable to fits and convulsions than adults. The causes which excite them are numerous, and should be generally known, that they may be as far as possible avoided.

Many infants are born with a tendency to fits. The children of feeble parents, or of those who have married very early or very late in life, are apt to be afflicted with a predisposition to them. Great fright or severe shock received by the mother during the latter months of her pregnancy may give rise to convulsions in the child soon after birth.

Pale, badly nourished, soft, flabby children, and those of a sensitive, nervous temperament, are more liable to fits than those who are ruddy and hardy. Hence we find convulsions more common and fatal among the poor and miserable than among the 'well-to-do' and comfortable. City children are more subject to the complaint than the country born and bred.

Fits are very frequent among infants while teething. In such cases lancing the gum secures immediate relief. Another cause of fits, and one which every mother should know, is the giving of meat to the child before its teeth are cut. In such cases the attack is sudden, and often very severe. Children most affected in this way by animal food are those with water on the brain, and those of a

very delicate constitution. The juice or broth of meat is in some such instances sufficient to produce fits. The remedy consists in the institution of a milk diet. In all doubtful cases avoid a meat diet in any form, and watch the result.

Strong mental emotions, such as fright, shame, or anger, may cause a fit in a child. A nurse in England threatened to throw a child out of the window if he did not stop crying; the little boy fell at once into convulsions, from which he died.

Among other known causes of fits are confinement to heated, badly ventilated rooms, tight bandaging, and sudden exposure to severe cold or heat.

In treating of the influence of the mother's mind over the nursing child (p. 251), we mentioned a number of instances of children thrown into convulsions by changes in the quality of the milk caused by the mental emotion of the mother. The importance of the subject induces us to quote here the corroborating remarks of Dr. Churchill, in the last edition of his standard work on diseases of children. 'During the first year of life, convulsions may not unfrequently be traced to the milk of the mother or nurse disagreeing with the infant, or having been disordered temporarily by fright, passion, or suffering. Sœmmering mentions a curious case of a woman whose milk agreed with her own child, but caused convulsions in all others. M. Guersant relates the instance of a woman deserted by her husband, and in her distress her infant had an attack each time it took the breast. Dr. Underwood mentions a mother who nursed her child immediately after witnessing a sudden

death; the child was attacked by convulsions, after which it remained comatose for thirty-six hours, but ultimately recovered. Numerous cases are on record of convulsions supervening upon violent passion in the nurse. I have witnessed more than one case resulting from the mother suckling her child during a time of severe affliction and distress.'

We deem it useless to describe a fit. Almost every one has seen it, and at once recognises it. We shall proceed, therefore, at once to the *treatment*.

When a child is attacked with a fit the dress should be loosened, all tight bandages and pins removed, and plenty of fresh air admitted into the room. It should not be held upright in the arms, but placed in a lying position. A warm bath (that most useful remedy in so many of the ailments of children) should be speedily prepared, and the child immersed for a few minutes, then removed, dried, and wrapped in a blanket. A hot mustard foot-bath is also of service. The cause of the fit should be at once sought, for upon it will of course depend to a great extent the treatment required. If the child be teething, and the gums be found to be red and swollen, they should be lanced. If the child has eaten too much, or of improper food, an emetic should be given. A little mustard and salt mixed in a tumbler of warm water affords a ready, safe, and effectual emetic.

The dashing of cold water upon the face will sometimes promptly end the fit. The application of powdered ice in a bladder, or of cold water cloths to the head, is of service where the face is much flushed and the movements very violent.

Children subject to fits should live in a well warmed house. By this we do not mean that the rooms and hall ways should be kept hot, still less that they should be close and improperly ventilated. The temperature of the bed-room should not be lower than 70 degrees, and great care should be taken during cold weather to avoid chilling the child outdoors.

Rubbing of the child's body once a day with good salad oil is an excellent and readily applied remedy in these cases. The little patients do not ordinarily object to it. As it is a procedure calculated to improve the general health, we strongly recommend every mother whose child has frequent fits, to try it.

The dress of the child should be warm, loose, and comfortable. Perfect quietness is important for a time after attacks. Do not excite the child by seeking to amuse it. Let it sleep as much as it will.

In those cases in which a fit has been followed by weakness of the limbs, medical assistance will of course be procured. As a rule, recovery in such instances is slow, but, when properly directed, perfect. Change of scene, country air, and exercise, friction of the body with a flesh-brush or salt towel, salt water baths, and electricity, are all valuable agents towards cure.

NOSE-BLEED.

Bleeding from the nose may be produced by a blow or by over-exercise of the child at play. In either case the trouble is usually a trifling one.

Some children, however, are liable to attacks of nose-bleed coming on without any assignable causes. One of the consequences of scarlet fever and whooping cough is sometimes a tendency to repeated and serious spells of bleeding from the nose.

The *treatment* in these cases consists in quieting the alarm of the child if it be frightened, and in applying cold water or pounded ice to the nose and forehead and to the back of the neck. It is because of its coldness that the key placed down the back, as so commonly advised in domestic practice, does good.

An exaggerated idea of the amount of blood lost is often a cause of distress to parents. They forget that the child has been bleeding in a vessel of water, and that a very little blood darkly colors a large quantity of water.

Bleeding from the nose is sometimes a favorable symptom, as when it occurs during a fever, or when in girls approaching womanhood it precedes the expected signs of puberty. It is an unfavorable symptom, however, in scrofulous children and in girls affected with green-sickness, as in these instances it aggravates the existing disorders.

In those rare cases of protracted bleeding which resist the remedies we have mentioned, it may be necessary for the surgeon to plug the nostrils, both in front and at their opening into the throat.

This extreme measure is fortunately scarcely ever called for, and can only be carried out by the physician.

WORMS.

Children are often thought to have worms when entirely free from them. There is hardly a symptom of any disease which has not been supposed by some to be a sign of the presence of worms. A child suffering from some other complaint is, therefore, not unfrequently dosed with vermifuges to its injury. We can give the mother one symptom of worms which is infallible. It is the only one upon which she can rely, namely, the detection of worms in the stools of the child. Until these expelled intruders are actually found she should be slow to believe that the child is thus affected, and still slower to give worm medicine. Before beginning treatment, let the mother wait until the need of it is made out by the result of the examination we have mentioned.

The *treatment* of the ordinary worms to which children are subject is simple and usually speedily efficacious. Commence with a dose of Epsom salts, of magnesia, or of cream of tartar, as may be preferred. The next day administer a vermifuge, of which the best and pleasantest is *santonine*. Obtain from the druggist three or four three-grain powders of this medicine. Give the half or the whole of one of these powders, according to the age of the child, at bed-time. The next morning administer a purgative dose of oil or salts. Repeat this treatment every other day until three doses of santonine have been taken. Or, from two to six grains, according to the age of the patient, may be dissolved in two

table-spoonsful of castor-oil, and a tea-spoonful given every hour until it operates.

An excellent domestic remedy for worms, one which was a great favorite with the celebrated Dr. Rush of Philadelphia, is common salt. For a child two or three years old, the proper dose is a tea-spoonful mixed in a wineglassful of water. When the child can be got to take it in sufficient quantity, this remedy is a very efficient one.

Most cases of supposed worms in children are best treated by regulating the diet, by attention to the air and exercise of the child, by warm baths, and by endeavoring to improve the appetite, the digestion, and the strength. The food should be plain and unirritating (bread, milk, rice, arrowroot, chicken, lamb or mutton broth, beef-tea, mutton chop, young chicken); the meals should be taken in smaller quantities than usual, and at regular intervals. Sweets and confectionery should be forbidden, and but few vegetables permitted for awhile. A perseverance in this regimen for a short time will usually cure the little patient without the necessity of resorting to any vermifuge.

Worms are most frequent between the ages of three and ten years. Girls are oftener affected than boys. A tendency to worms is hereditary. Cases occur more frequently during the spring and autumn than during the other seasons. A residence in cold, damp, unhealthy situations leads to their production in many instances.

BED-WETTING.

This troublesome disorder is not unfrequently met with in children—more especially boys—under twelve years of age. It is a mistake to suppose, as is done by some parents, that slothfulness or negligence is the invariable and only cause of this infirmity; on this point Dr. Vogel says:—'In most cases which I have observed, the children through their own sense of honor or on account of repeated punishments, had a lively interest in avoiding the accident, and yet were unable to do this without appropriate treatment pursued for months, and even years.' Dr. Tanner states:—'Very frequently this affection is the consequence of bad habits; being favored by the free use of fluids during the after part of the day, by exposure to cold in the night, and by lying on the back.'

The presence of worms in the bowels is one of the causes of this annoying ailment, and they should be sought for in all cases. Stone in the bladder sometimes occasions the affection, but in such instances other symptoms will soon point to the true nature of the trouble.

This subject is one of an importance which demands some attention from us in a work for parents. In the language of Dr. Vogel, 'the effects of this malady are unpleasant, for the psychical development in particular suffers. The repeated punishments which these children undergo blunt their sense of honor considerably; they become cowardly and deceitful, and have no personal spirit. If great and expensive cleanliness is not practised, the bed,

and even the whole room, acquires a urinous odor, which contaminates the atmosphere and begets conditions by no means favorable to healthy growth Such children may be ultimately attacked by indolent ulcers on the nates and lower extremities, the results of urinous excoriations.'

The only *symptom* ordinarily present is that the child towards morning or in the middle of the night wets the bed without waking. This may happen several times during the sleep, and recur every night In some cases the act takes place only every other night, but it is rare that there is an interval of more than one night.

The *cause* of this failing is sometimes very simple and one easily remedied ; for it is often the result of neglecting to take young children up once during the many hours they require for sleep. By attention to this matter and to the diet, the habit may be speedily broken. Unfortunately most cases are not so quickly amenable to treatment.

In the *treatment* of this infirmity, corporal punishment should not be thought of. It is useless, cruel, and unnatural. The child might as well be punished because it squints or has club-foot.

Care must be taken to see that the little patient eats or drinks nothing for several hours before bedtime. The child should also be awakened a little before midnight, and at a very early hour in the morning, and made to empty its bladder. It is of great importance to get the child to sleep upon its side or face, as lying upon the back is sure to increase the trouble. Indeed, it is frequently observed that the child always remains clean when it

is prevented from turning upon its back during sleep. The difficulty lies in the prevention. The plan of tying a cloth or towel around the child with a knot over the spinal column, to awaken it by the pain when it rolls over upon the back, so often proposed, seems good advice easily followed. But practically it fails, as it is impossible, without making the bandage too tight, to keep it in place. The benefit which, in some instances, has followed the employment of a succession of small blisters directly over the lower part of the spinal column, is doubtless due to their forcing the child to sleep upon the face or side. The remedy is somewhat a painful one, but should be tried in obstinate cases.

The child's general health, if enfeebled, should be improved by cold baths, bitter tonics, and if possible a change of air. In no case should any mechanical means be employed to arrest the infirmity. Serious and even fatal results have followed such attempts.

If the precautions and simple remedies we have mentioned fail, recourse must be had to the family physician. The drugs which are of benefit are too powerful to be entrusted to any other hands. The hygienic method of cure we have pointed out will, if instituted early, be effectual in all excepting very obstinate cases, which latter indeed sometimes resist for a long time the best efforts of medical skill.

LOOSENESS OF THE BOWELS.

Children under one year of age should have two movements of the bowels in the twenty-four hours.

and those from one to three years at least one stool a day.

A slight attack of looseness is often beneficial if it passes away within a day or two. It is easy, however, for such an attack to become hurtful, especially if the food be improper, or the weather warm. A looseness which is of no consequence in the winter may well excite uneasiness during the summer months.

Diarrhœa in a healthy child is ordinarily preceded by vomiting. If the diarrhœa persist long, the little patient is much prostrated by it, and rapidly reduced in flesh. Such an attack should never, therefore, be neglected.

In the case of an infant not weaned, it should be removed from the breast for half a day or more, that the stomach may have little or nothing to do. Barley or rice water, or ordinary water, may be given in small quantities at a time to relieve the thirst. This in many cases will be all the treatment required.

In the case of an elder child, all meat and vegetables should be at once forbidden, and the only food allowed for a day or two must be rice and milk, arrowroot, or milk and water.

The dose of castor oil which is so frequently given by nurses in these cases under the impression that the oil is 'healing,' is only of service when the diarrhœa has been caused by food of improper quality or quantity. It then aids nature in her efforts to get rid of the offending matter, which by its irritation is doing the mischief. In such instances one dose of the oil is quite sufficient. It

has no 'healing' virtues, and should not be repeated from day to day.

Children who are teething are frequently affected with looseness. A warm bath every evening, and attention to the gums, will be ordinarily all that is required in these cases, at least during the cold months. It is of the utmost importance, however, during the summer that such patients, if living in the city, should be at once removed into the country; otherwise their lives are in danger.

Looseness of the bowels in children is usually best treated by careful management of the clothing and diet, by attention to all that affects the health, and by avoiding as much as possible the administration of medicines. No case should be allowed, however, to run on without seeking competent medical advice.

An excellent remedy for the diarrhœa of children is the subnitrate of bismuth.

This medicine may be disguised in the food, as in a case narrated by Dr. Inmann. A lad about ten years old was brought to him by an aunt, who stated that the boy suffered much from diarrhœa, and was emaciating visibly; that he would not try any domestic remedy, was an obstinate fellow, and determined to take no medicine. After sending the lad to another room the doctor recommended the lady to get some white bismuth and give it to the cook, telling her to mix a large pinch of it with some butter, and to send in the bread and butter so arranged that the lady would know which was for the boy. This was done. The lad was duly

drugged without his knowledge, and the diarrhœa stopped in two days.

INDIGESTION.

Infants and young children suffer often from indigestion, or *dyspepsia*, as well as adults. One of the most frequent signs of this disorder is vomiting. But every infant which throws up its milk is not suffering from indigestion. Vomiting is sometimes a sign of health, and shows that the stomach is vigorous enough to free itself promptly from excess of food. The child is thus saved from the effects of over-feeding. The obvious remedy is to diminish the quantity of milk taken at each nursing or meal.

But vomiting from over-feeding is very different from that caused by irritation of the stomach, which causes it to reject proper food. The common sense of the mother will enable her easily to distinguish between the two sorts. In the former, the child remains cheerful, happy, and well nourished, scarcely changing countenance even while the superabundant milk is being returned from its stomach. In the latter, the child soon becomes pale, feeble, and distressed looking. Over-feeding, if persisted in, may occasion indigestion.

Indigestion during the first year of life shows itself by languor, palor, and evident discomfort. The child wishes to be constantly at the breast, and suckles eagerly, but vomits the milk shortly after, usually curdled. The bowels are either constipated or too loose. The most prominent and often the only symptoms are this alternation of vomiting and an eager desire to take the breast,

associated with loss of flesh and strength. The child is evidently not nourished by the food it takes, and if relief be not afforded it sinks, and dies from starvation in the course of a month or two.

Children who are *weaned abruptly, and at a very early period*, are liable to a serious form of indigestion, which may come on in a few days after weaning, or not for several weeks.

Older children are liable to slight attacks of indigestion, which are attended with vomiting or purging, or both, for a few days, when the stomach recovers its health. In some cases, however, the derangement continues longer, the child then losing its appetite, and suffering from colic, and becoming fretful, pale, and weak. The breath becomes sour, and the passages green. Such cases require careful watching and treatment, especially during the hot weather of the summer.

In infants at the breast indigestion is usually caused by giving the breast too often or by an excess or change in the quality of the milk. Errors in diet on the part of the mother, and other faults which we have pointed out in our chapter on nursing, are the most frequent causes of this ailment. In children who are weaned the causes are almost invariably improper food or food taken too frequently, or in too large quantities. The hint should be taken when a child rejects its food, to change it, or give it less. Instead of this, too frequently the child is urged to take more, and thus derange the stomach.

The *treatment* of indigestion in childhood is

usually easy and satisfactory. The first thing is to look to and regulate the quantity and quality of the food. It it be due to excess of food, this is easily remedied. If due to improper quality, change it promptly. When the mother's health is such that her milk is found to frequently or constantly disagree with her child, a suitable wet-nurse must be procured.

In most cases the attack is mild, and readily yields to a few hours' abstinence from food. As it often happens, especially in artificially-fed infants, that the gastric juice is more acid than it should be, great benefit is derived from the use of *precipitated chalk* or *carbonate of soda*. A few grains of either of these, given several times a day for a few days, will be found to effect a surprising change and alone restore the appetite and digestion.

In older children an attack of indigestion should be the signal for putting them upon a simpler and more restricted diet for a time. Milk, eggs, arrow-root, tapioca, sago, panada, &c., are better than animal food. If the child becomes much weakened, jellies, chicken, lamb, mutton, or oyster broth, beef tea, or wine whey, should be given to check the tendency to exhaustion.

We repeat, that most cases of indigestion in infants and children yield promptly to an immediate change in the diet, without medicine.

HINTS ON HOME GOVERNMENT.

On this subject, as it may be regarded as outside of our domain of hygiene, we have but few words to say. We wish, however, in the interests of

medicine and hygiene, to insist upon the necessity of training children to prompt, implicit obedience to the parental voice. As physicians, we have seen the spoilt, undisciplined child, when sick, rebellious alike to persuasion and command, refusing food and medicine, revolting against the slightest examination, and by its violence and capriciousness, converting a slight illness into a dangerous one. For a child unaccustomed to obedience there is no proper treatment possible when sick; nor when well is there any proper care possible for the preservation of the health. What it wants, and not what it ought to have, is given it, and every one knows that a child's instincts are no guide to health. With health, happiness is sacrificed also. There is no surer way of making a child miserable than by accustoming it to obtain all it wishes, and to encounter no will but its own. Its desires grow by what they feed upon. As a French writer on education has well expressed it: 'At first it will want the cane you hold in your hand, then your watch, then the bird it sees flying in the air, and then the star twinkling overhead. How, short of omnipotence, is it possible to gratify its ever-growing wants?' Accustom the child to hear 'no' and 'must,' but let these hard words be softened by voice and manner—an art in which every true mother excels.

But, on the other hand, do not harass the child by needless restrictions, nor worry it by excess of management. We desire to call attention here to the words of an eminent English divine and learned writer, Archbishop Whately:—

'Most carefully should we avoid the error which

some parents, not (otherwise) deficient in good sense commit, of imposing gratuitous restrictions and privations, and purposely inflicting needless disappointments, for the purpose of inuring children to the pains and troubles they will meet with in after life. Yes; be assured they *will* meet with quite *enough* in every portion of life, including childhood, without your strewing their paths with thorns of your own providing. And often enough you will have to limit their amusements for the sake of needful study, to restrain their appetites for the sake of health, to chastise them for faults, and in various ways to inflict pain or privations for the sake of avoiding some greater evils. Let this always be explained to them whenever it is possible to do so; and endeavor in all cases to make them look on the parent as never the *voluntary* giver of anything but good. To any hardships which they are convinced you inflict reluctantly, and to those which occur through the dispensation of the All-wise, they will more easily be trained to submit with a good grace, than to any gratuitous sufferings devised for them by fallible man. To raise hopes on purpose to produce disappointment, to give provocation merely to exercise the temper, and, in short, to inflict pain of any kind, merely as a training for patience and fortitude—this is a kind of discipline which man should not presume to attempt. If such trials prove a discipline not so much of cheerful fortitude as of resentful aversion and suspicious distrust of the parent as a capricious tyrant, you will have only yourself to thank for the result.'

It is a matter of common observation that those who complain of their fortune and lot in life have often to complain only of their own conduct. The same is true of those who complain of their children. They have themselves only to blame in each case.

Parents who do not appreciate the responsibilities of their position usually err on the side of over-indulgence to their children; on the contrary, those fully alive to the importance of home discipline often err on the side of over-regulation. To the latter, we commend the reply of an old lady to the anxious inquiry made by the mother of a too rigorously disciplined child as to what course should be pursued, 'I recommend, my dear, a little wholesome neglect.'

Lessons of truthfulness; of fortitude in bearing pain and disappointment; of the duty of right doing, because it is right and not because it is the best policy; of frugality and industry; of self-denial, contentment, and charity, should be early impressed upon the plastic mind of infancy. We wish also, in this connection, to quote the words of a wise physician and observer of men, that 'the little child who is brought up to repeat short and simple prayers at his mother's knees, has a rule of conduct thereby instilled into him which will probably never be forgotten; and, in after life he may not only look back to these beginnings with feelings of reverence and love, but the recollection of them may serve to strengthen him in some good resolution, and help him to resist many a powerful temptation.'

We have had occasion frequently in various parts of this work to point out the intimate relations which exist between the physical and mental nature of parents and their offspring. Like parent, like child. The same close connection and sympathy extends to the moral and religious character; hence that direction and training which relies largely upon the *force of parental example* is the most effective method of home government. Virtuous precepts, or rigidly enforced rules of conduct, avail little unless the parent keeps the path to which he points the child.

'Well, upon my word, Mrs. Primrose, you have the handsomest children in the whole country.' 'Ah! neighbor,' replied the wife of the Vicar of Wakefield, 'they are as heaven made them—handsome enough if they be good enough—handsome is that handsome does.'

IS THE RACE DEGENERATING?

This is a question which peplexes some minds in our times. A German author of note has recently written a volume to prove that each generation is feebler than the preceding. Old physicians say that in their youth diseases of exhaustion were rarer than now-a-days. For this our habits of life, the pressure on our nervous systems, the prevalence of hereditary diseases, and the excessive use of narcotics and stimulants, are held responsible. The fathers,' say these croakers, 'have eaten sour grapes, and the children's teeth are set on edge.'

We attach little weight to these gloomy views. There are plenty of facts on the other side. The

suits of old armour still preserved in our museums prove that, as a rule, we have slightly gained in weight and size. Tables of life insurance companies and reports of statistics show that the average length of human life is greater than it ever was. Dr. Charles D. Meigs used to state in his lectures that the size of the head of American infants at birth is somewhat greater than in the Old World.

That there are more numerous diseases than formerly, is not true; but it is true that we know more, for we have learned to detect them more readily and to examine them more minutely. This is especially true of such as are peculiar to women. Within the last ten or twenty years so much that is of sovereign importance has been contributed to this department of medical science, that it is hardly possible for one to become an expert in it unless he gives it his whole attention.

To avoid the tendency to debilitated frames and chronic diseases, woman should therefore learn not only the laws of her own physical life, but the relations in which she stands to the other sex. Thus she can guard her own health, and preserve her offspring from degeneracy. It is only by enlightenment, and the extension of knowledge on the topics relating to soundness of body and mind, that we can found rational hopes of a permanent and widespread improvement of the race.

Some have maintained, not understanding the bearing of the facts, that such degeneracy is more conspicuous in the frame of woman than anywhere else. They quote the narratives of travellers, who

describe with what fortitude—we might almost say with what indifference — the Indian women, and those of other savage races, bear the pangs of childbirth, and how little the ordeal weakens them. A squaw will turn aside for an hour or two when on the march, bear a child, wash it in some stream, bind it on the top of her load, and shouldering both, quietly rejoin the vagrant troop. Our artificial life seems indeed, in this respect, to be to blame; but if we look closer, we can learn that these wild women often perish alone, that they are rarely fertile, that unnatural labors are not unknown, and that the average duration of their life is decidedly less than among the females in civilised States.

HEALTH IN MARRIAGE.

THE PERILS OF MATERNITY.

IN the early part of this work we quoted some authorities to show that those women who choose single life as their portion do not escape the ills of existence, nor do they protract their days, but, on the contrary, as shown by extensive statistics, are more prone to affections of the mind, and die earlier. While, therefore, nature thus rewards those who fulfil the functions of their being, by taking part in the mysterious processes of reproduction, and perpetuating the drama of existence, it is true also that she associates these privileges with certain deprivations and suffering. We do not wish to throw around the married state any charms which are not its own. Rather is it our aim to portray with absolute, and therefore instructive, fidelity all that this condition offers of unfavorable as well as favorable aspects.

Let us say at once, maternity has its perils,—perils as peculiar and as inevitable as those which pertain to single life. Our present purpose is to mention these, and by stating their nature and what are their causes, so far as known, to put married

women on their guard against them. Some are almost trifling, at least not involving danger to life; others most harassing to the sufferer and to her friends.

We shall now consider the principal diseases to which married women are exposed from pregnancy, from childbirth, and from nursing.

DISEASES OF PREGNANCY.

In treating of pregnancy we have pointed out that it was a healthy and happy condition to most women. The exceptional cases are mainly those in which the health is injured by mental trouble or anxiety. Thus the young and delicate girl newly married is full of vague alarms in regard to the pains and dangers of her untried path to maternity. She frets herself and embitters her life during those months in which tranquillity is of the utmost importance. Is it surprising, then, that her health should be disordered, and that she should suffer from some of the diseases incident to the pregnant state?

Again, the mother of a large family, but the mistress of a small income, is distressed by the thought of additional expense, which it seems to her, particularly in her nervous state, impossible to meet. This condition of protracted anxiety is ill fitted to enable her to resist any tendency to disease to which she may be exposed. Indeed, prolonged vexation from these and other causes not unfrequently tend to *puerperal mania* (a disease of which we shall shortly have something to say), or to some other nervous affection.

The wife during pregnancy should therefore be treated with unusual kindness by those about her, and every attempt made to soften her lot. The erroneous impression prevails among some that the pregnant wife should enure herself to toil and hardship This notion is doubtless due to the observation that domestic animals that are subjected to a life of labor bring forth their young with little suffering. 'The cow in the country farm, living unfettered in the meadow until the day of calving, has in general a safe and easy labor. The poor beast, on the contrary, which is kept in a town dairy, has a time so incredibly dangerous that the proprietor generally sells off his stock every year, and replaces it with cows in calf; such cows not being put into the stalls till within six or eight days of the expected period of labor. The deduction from this is that an artificial mode of life—a life maintained by improper food, and without a sufficient supply of pure air, or a due amount of exercise—has a most deleterious influence upon the process of labor; and not that a toilsome existence, embittered with all the pains and anxieties of poverty, gives comparative immunity from danger in the hour of child-birth.' One of the discomforts of pregnancy is—

MORNING SICKNESS.

This affection, when confined, as is usually the case, to the morning and early part of the day, rarely requires much medical care. Its absence, which, as we have said, is a frequent cause of miscarriage, is more to be regretted than its presence

especially as it is apt to be replaced by more serious troubles.

Relief will be afforded by washing the face and hands in cold water, and taking a cup of milk or a little coffee and a biscuit or sandwich, *before raising the head from the pillow* in the morning, remaining in bed about a quarter of an hour after this early meal; then dressing quickly, and immediately going out for a half-hour's walk. Rest in a half-recumbent posture during the day, particularly after meals, is beneficial. The affection is mostly a nervous one, and is best combated by eating. The food should be plain and unirritating, but nutritious, and should be taken frequently, in small quantities at a time.

When the nausea and vomiting are excessive, and continue during the day, there is generally some disordered condition of the digestive apparatus.

This may be corrected by taking at night a teaspoonful of the confection of senna, a pleasant preparation of this ordinarily disagreeable medicine, and by drinking three times a day, before each meal, a wine-glassful of a tea made with columbo. Half an ounce of powdered columbo should be added, for this purpose, to a pint of boiling water.

Dr. John H. Griscom of New York recommends the bromide of potassium, which is a harmless medicine for domestic practice, as affording the most useful means of arresting the nausea attendant on pregnancy.

The following prescription may be compounded

by any druggist, and will often be found very effective:

Take of Bromide of Potassium, two drachms,
„ Cinnamon water, three fluid ounces.

Of this a dessert spoonful may be taken two or three times a day. It may be used with confidence as an entirely safe and harmless remedy in this troublesome affection.

A prescription frequently ordered for the nausea of pregnancy by the late distinguished Dr. Meigs, consisted of equal parts of sweet tincture of rhubarb and compound tincture of gentian—a dessert spoonful to be taken after meals.

Pain in the abdomen, caused by the distension of its walls, may be relieved by the application of equal parts of sweet oil and laudanum.

Another common and annoying, but rarely dangerous, trouble during pregnancy is—

VARICOSE VEINS.

The veins of the legs become distended, knotted, and painful. Women who have borne a number of children suffer most from this affection. It seldom attacks those passing through their first pregnancies. It ordinarily first shows itself during the second pregnancy, and becomes rapidly worse during the third or fourth.

Although it is difficult to cure this disease during the continuance of the pregnancy, much can be done to prevent its occurrence, and to relieve it when present. Tight garters worn below the knee, and closely laced corsets, tend to cause and in-

crease this swollen condition of the veins. Neither should be used during pregnancy.

Relief is best afforded to the suffering parts by means of a well-made and adjusted *elastic stocking*, which may be readily procured from a druggist or surgical instrument maker. In severe cases it may be necessary for the patient to keep herself as much as possible in the recumbent position on the bed or sofa. In all cases the feet should be supported when seated, so as to keep the blood from further distending the already swollen veins.

PILES.

That painful condition of the veins of the lower bowel known as hæmorrhoids, or piles, is a not unfrequent annoyance to pregnant women. Sometimes it is caused by prolonged constipation During the period of pregnancy, therefore, constipation should be guarded against.

Ordinarily the piles are small, and of little consequence beyond the slight uneasiness they occasion. The trifling loss of blood from them is of no account, and often beneficial. The case is different, however, when the piles are large and painful, and give rise to much pain and copious bleeding. They then require prompt treatment.

In the *treatment* of piles the first point to be aimed at is to keep the bowels moderately open. It must not be forgotten, however, that during pregnancy only the mildest of purgatives are ever to be given. Castor oil, although a disagreeable, is a most excellent prescription in these cases. A small dose, repeated when necessary, will be found to act

most kindly. If this remedy be too repugnant to the patient, small quantities of citrate of magnesia, or of cream of tartar, or of some of the natural mineral waters, may be employed. Small injections of luke-warm water are also of great service, and may be tried instead of laxatives.

After every movement the parts should be well sponged with cold water, and an ointment of galls and opium, procured from the druggist, applied.

If the parts become very much inflamed, warm poultices or hot chamomile solutions should be used, and the patient kept in bed until the inflammation subsides.

No attempt is to be made to effect the radical cure of piles during pregnancy. Any such attempt, besides being dangerous, is unnecessary, for the piles usually disappear of their own accord after the confinement. Every effort to make the sufferer more comfortable in the manner we have suggested is, however, right and safe.

DIARRHŒA.

Some women always suffer from looseness of the bowels during pregnancy; others are very liable to attacks of it during this period, either coming on without any assignable cause or easily excited by any slight indiscretion in eating. In many instances these attacks alternate with constipation or with morning sickness.

The diarrhœa, if at all severe or prolonged, should not be allowed to go on unchecked, for it quickly weakens the patient and predisposes her to abor-

tion. The fœtus is especially endangered when the passages are attended with much bearing-down pain. In some exceptional cases, however, a slight diarrhœa seems to be beneficial, for every attempt to remove it appears to do harm; but these instances are very rare.

The *treatment* required is a simple, and must be a cautious one. Ordinarily no medicine will be needed. If the patient will merely confine herself to milk and arrowroot and rice for twenty-four hours a cure will be effected in mild cases. When it is apparent that the attack has been caused by improper food, a tablespoonful of castor-oil or a teaspoonful or two of tincture of rhubarb will remove the offending material in the bowels, upon the presence of which the diarrhœa depends. A small injection of a teaspoonful of rice water and thirty or forty drops of laudanum will often speedily arrest the excessive discharges, and relieve the pain.

CONSTIPATION.

No woman while pregnant should allow several days to elapse without a movement from the bowels. The symptoms of constipation, slight at the outset, soon cause great inconvenience. Among the effects, which, sooner or later, show themselves, may be feverishness, sleeplessness, headache, distressing dreams, sickness at the stomach, severe bearing-down pains, and piles.

Medicines are rarely required in the treatment of constipation, and the pregnant woman should never take an active purgative, excepting under medical advice. Outdoor exercise and regularity in solicit

ing nature's calls, together with a change in the diet, will usually have the desired effect. Brown bread, wheaten grits, oatmeal gruel, ripe fruits, fresh vegetables, stewed prunes, or prunes soaked in olive oil, baked apples, figs, tamarinds, honey, and currant jelly are all laxative articles which should be tried.

In some instances a tumbler of cold water drunk the last thing at night, and another the first thing in the morning, will act in a most satisfactory manner. If the constipation should resist these safe and homely remedies, which will rarely be found the case, then medical assistance should be called in. On no account should the wife herself, or in accordance with the counsel of any non-medical friend, resort to purgative drugs.

COUGH.

A troublesome cough sometimes affects delicate, nervous women during the early months of pregnancy. If it be not very frequent nor severe, it requires no attention, as it will pass away of itself in a short time. When, however, it disturbs the sleep at night, renders the patient anxious, and causes headache and weariness, it is time to do something for it. It may, indeed, be so violent as to threaten abortion on account of the forcible concussion of the abdomen it produces.

A teaspoonful of paregoric occasionally repeated during the day will be found a most efficient soothing remedy.

WAKEFULNESS.

Sleeplessness, always distressing, is particularly so to pregnant women. If prolonged, it leads to serious consequences. It should receive, therefore, the most prompt attention.

The *causes* of sleeplessness during pregnancy are numerous. Dyspepsia is one of them. Whenever indigestion is present the diet should be plain and simple, and everything avoided which produces heartburn, sourness, or flatulency. It is important also not to take tea or coffee late in the afternoon or evening—a late cup of either being a frequent cause in itself of sleeplessness.

Sometimes the reason for the wakefulness will be found in a want of exercise or too constant confinement to closely-heated rooms. Or, it may be that exciting novels are read late in the evening. Perhaps the evening meal is too heavy and taken too late.

The *treatment* of sleeplessness consists first, of course, in the removal of the apparent cause. The patient should have a regular hour for retiring, which should be an early one. The bed-room should be quiet, well ventilated, and slightly warmed. The bed coverings must not be too heavy nor the pillows too high.

A warm bath of the temperature of 90 to 96 degrees Fahrenheit, taken just before going to bed, often invites sleep. A rapid sponging of the body with warm water may have the same effect. A tumbler of cold water, when the skin is hot and

dry, swallowed at bed-time, sometimes affords relief. If the bowels are constipated relief should be sought in the manner we have just mentioned in speaking of constipation.

When there is nervous excitement at night, and the means we have advised fail to propitiate 'nature's soft nurse,' there is a sedative medicine which may be used with safety and effect—it is bromide of potassium. The same proportion which we have given for the treatment of morning sickness (see page 355) may be now used. Have the three-ounce mixture put up by the druggist, and take a dessertspoonful or a tablespoonful just before bed-time. It frequently acts almost as if by magic. On no account should recourse be had to opiates or dangerous sedative drugs.

DISEASES OF CHILDBED.

Childbirth being a healthful physiological condition, is usually neither attended nor followed by mischievous results. Occasionally, however, the mother suffers in consequence of the prolonged or difficult character of her labor. The longer the labor the greater the danger to both mother and child. Thus child-birth pangs prolonged beyond twenty-four or thirty-six hours are much more apt to be attended with danger or followed by disease than those terminated within a few hours.

The following aphorisms were laid down by the late distinguished Professor James Y. Simpson, namely:—

The mother is more liable to suffer under diseases of the womb after long than after short labors.

The child for some time after birth is more liable to disease and death, in proportion as the labor has been longer in its duration. First labors are longer in duration than subsequent ones, and in a proportionate degree more complicated and dangerous to mother and child. Male births are longer in duration than female births, and in a proportionate degree more complicated and dangerous to mother and child.

Many tedious confinements, however, are happily terminated without the slightest injury to mother or child. Whenever the labor has been unusually prolonged, unusual care and caution should be exercised in the treatment of the mother and infant for many weeks after the event.

One of the most distressing affections to which women are exposed from childbirth is

PUERPERAL MANIA.

This is a variety of insanity which attacks some women shortly after childbirth, or at the period of weaning a child. The period of attack is uncertain, as it may manifest itself first in a very few days, or not for some months after the confinement. Its duration is likewise very variable. In most instances a few weeks restore the patient to herself; but there are many cases where judicious treatment for months is required, and there are a few where the mental alienation is permanent, and the wife and mother is never restored to her sanity.

The question has been much discussed, Whether such a condition is to be imputed to a hereditary tendency to insanity in the family, and also whether

a mother who has had such an attack is liable to transmit to her children, male or female, any greater liability to mental disease. We are well aware what deep importance the answers to these inquiries have to many a parent; and in forming our replies, we are guided not only by our own experience, but by the recorded opinion of those members of our profession who have given the subject close and earnest attention. To the first query, the reply must be made, that in one-half, or nearly one-half, of the cases of this variety of insanity there is traceable a hereditary tendency to aberration of mind. Usually one or more of the direct progenitors, or of the near relatives of the patient, will be found to have manifested unmistakeable marks of unsoundness of mind. In the remaining one-half cases no such tendency can be traced, and in these it must be presumed that the mania is a purely local and temporary disorder of the brain. The incurable cases are usually found in the first class of patients, as we might naturally expect.

The likelihood of the children, in turn, inheriting any such predisposition, depends on the answer to the inquiry we first put. If the mania itself is the appearance of a family malady, then the chances are that it will pass downward with other transmissible qualities. But if the mania arise from causes which are transitory, then there is no ground for alarm.

An inquiry still more frequently put to the physician by the husband and by the patient herself after recovery, is, Whether an attack at one confinement predisposes her to a similar attack at

a subsequent similar period. There is considerable divergence of opinion on this point. Dr. Gooch, an English physician of wide experience, is very strenuous in denying any such increased likelihood, while an American obstetrician of note is quite as positive in taking the opposite view. The truth of the matter undoubtedly is, that where the mania is the exhibition of hereditary tendency, it is apt to recur; but where it arises from transient causes, then it will only occur again if such causes exist.

THE IMPORTANCE OF PREVENTION.

Here, therefore, we perceive the importance of every woman, who has had, or who fears to have, one of these distressing experiences, being put on her guard against disregarding those rules of health the neglect of which may result so disastrously. One of the most powerful of these causes is *exhaustion*. We mean this in its widest sense, mental or physical. In those instances where mania appears at weaning, it is invariably where the child has been nursed too long, or where the mother has not had sufficient strength to nourish it without prostrating herself. It should be observed as a hygienic law, that no mother should nurse her children after she has had one attack of mania. The mere nervous excitement is altogether too much for her. She must once and for ever renounce this tender pleasure. We even go so far as to recommend that no woman in whose family a mental taint is hereditary shall nurse her children.

Anxiety, low spirits, unusual weakness from any

cause, are powerful predisposing causes; and therefore in all cases, especially in those where the family or personal history leads one to fear such an attack, they should be avoided. The diet should be nourishing and abundant, but not stimulating. Cheerful society and surroundings should be courted, and indulgences in any single train of ideas avoided. As for directions during the attack, they are unnecessary, as to combat it successfully often tasks the utmost skill of the physician; and it will be for him to give these directions.

WHITE-FLOWING.

This affection, though not confined to married women, is quite common during pregnancy and after confinement. There are few married women who pass through their lives without at some time or other having suffered from it.

We will consider first that *form of white discharge which affects pregnant women.* It ordinarily comes on during the latter half of pregnancy. Not only does it occasion much inconvenience, but it may, when copious, seriously weaken the system and impair the health.

The best treatment consists in a regulated, but supporting, diet without stimulants, the avoidance of all marital relations, plenty of rest in bed or on a sofa, a warm hip bath every morning, and the use of injections. One of the best injections for this purpose is made by adding a tablespoonful of lead-water to a pint of water, and injecting the whole twice a day, by means of a rubber, hard-ball syringe. As this solution will stain the body-linen,

due precautions should be taken. Instead of this injection, a small teaspoonful of alum dissolved in a pint of water and injected once a day may be used.

We will now say a few words upon *the form of white-flowing which affects women after childbirth.* It is a common result of too frequent confinements or of successive abortions. In women of a tendency to consumption it has been observed that white-flowing is more apt to arise in connection with child-bearing. Prolonged nursing, resulting in great debility of the mother, often produces very profuse white discharges.

In warm countries this affection is much more frequent than elsewhere. Moist and damp climates are said also to render women particularly prone to it.

The *treatment* must have regard to the general health of the patient. The mode of life must be regulated. A change of scene, if it can be procured, is often of the greatest benefit. Baths are also very useful. They may be taken in the form of a 'sponge bath,' or 'hip bath.' If the former be preferred, the patient should every morning, in a warm room, sponge the whole body, at first with tepid water and, after a time, with cold, the skin being well dried and rubbed with a coarse towel. The hip-bath may be employed either of simple, or of salt, or of medicated water. It should be at first warm, and afterwards cold. The skin is to be well rubbed after the hip as after the sponge-bath. The hip-bath may be medicated with three or four tablespoonfuls of alum, or with a quarter of a pound of common household soda.

In connection with this treatment, injections should be employed in the manner just directed for the white-flowing of pregnancy.

MILK-LEG.

This affection usually appears about ten days or two weeks after confinement. The first symptoms which show themselves are general uneasiness, chills, headache, and a quickened pulse. Then pains in the groin, extending down the thigh and leg of that side are complained of. Soon the whole limb becomes enlarged, hot, white, and shining. Feverishness and sleeplessness now naturally show themselves.

The disease rarely lasts more than two or three weeks, although the limb remains stiff, perhaps, for a number of weeks longer. It is painful, but not dangerous—rarely proving fatal.

When one leg is recovering, the disease sometimes attacks the other, and runs through the same course.

The treatment consists in enveloping the limb in turpentine stupes, followed by the application of poultices to the groin and a light diet at first. So soon as the severity of the attack is over, tonics and a generous diet should be given. The limb is then to be painted with tincture of iodine, or rather a mixture of one part of the tincture of iodine with two parts of alcohol, and afterwards wrapped in a flannel bandage.

The term 'milk-leg' has been applied to this inflammation, for such it is, from the notion that in some way the milk was diverted from the breasts

to the limb causing the white swelling. It is scarcely necessary to say this theory is entirely erroneous.

INWARD WEAKNESS

Many, we may say most, married women whose health is broken down by some disease peculiar to their sex, refer the commencement of their suffering to some confinement or premature birth. Perhaps, in four cases out of five, this breaking down is one of the symptoms of a displacement of the internal organs,—a malposition, in other words, of the uterus. This is familiarly known as an 'inward weakness;' and many a woman drags through years of misery caused by a trouble of this sort.

It is true that these malpositions occur in unmarried women, and occasionally in young girls. But it is also true that their most frequent causes are associated with the condition of maternity. The relaxation of the ligaments or bands which hold the uterus in its place, which takes place during pregnancy and parturition, predisposes to such troubles. It requires time and care for these ligaments to resume their natural strength and elasticity after childbirth. Then, too, the walls of the abdomen are one of the supports provided by nature to keep all the organs they contain in proper place by a constant elastic pressure. When, as in pregnancy, these walls are distended and put on the strain, suddenly to be relaxed after confinement, the organs miss their support, and are liable to take positions which interfere with the performance of their natural functions. Therefore we may rightly

place the greater tendency of married women to this class of diseases among the perils of maternity.

Within the last fifteen years, probably no one branch of medical science has received greater attention at the hands of physicians than this of diseases of women. Many hitherto inexplicable cases of disease, much suffering referred to other parts of the system, have been traced to local misfortunes of the character we have just described. Medical works are replete with cases of the highest interest illustrative of this. We are afraid to state some of the estimates which have been given of the number of women in this country who suffer from these maladies; nor do we intend to give in detail the long train of symptoms which characterize them. Such a sad rehearsal would avail little or nothing to the non-medical reader. It is enough to say, that the woman who finds herself afflicted by manifold aches and pains, without obvious cause; who suffers with her head and her stomach and her nerves; who discovers that, in spite of the precepts of religion and the efforts of will, she is becoming irritable, impatient, dissatisfied with her friends, her family, and herself; who is, in short, unable any longer to perceive anything of beauty and of pleasure in this world, and hardly anything to hope for in the next,—this woman, in all probability, is suffering from a displacement or an ulceration of the uterus. Let this be relieved, and her sufferings are ended. Often a very simple procedure can do this. We recall to mind a case described in touching language by a distinguished teacher of medicine. It is of an interesting young

married lady, who came from the Southern States to consult him on her condition. She could not walk across the room without support, and was forced to wear, at great inconvenience to herself, an abdominal supporter. Her mind was confused, and she was the victim of apparently causeless unpleasant sensations. She was convinced that she had been, and still was, deranged.

The physician could discover nothing wrong about her system other than a slight falling of the womb. This was easily relieved. She at once improved in body and mind, soon was able to walk with ease and freedom, and once more enjoyed the pleasure of life. In a letter written soon after her return home, she said, 'This beautiful world, which at one time I could not look upon without disgust, has become once more a source of delight.' How strongly do these deeply felt words reveal the difference between her two conditions!

There is one source of great comfort in considering these afflictions. It is, that they are in the great majority of cases traceable to

CAUSES WHICH ARE AVOIDABLE.

Most of them are the penalties inflicted by stern nature on infractions of her laws. Hence the great, the unspeakable, importance of women being made aware of the dangers to which they are exposed, and being fully informed how to avoid them. This task we now assume.

There is, we concede, a tendency in the changes which take place during pregnancy and parturition to expose the system to such accidents. But this

tendency can be counteracted by care, and by the avoidance of certain notorious and familiar infractions of the laws of health. It is usually not until she gets up and commences to go about the house, that the woman feels any pain referable to a displaced womb. Very frequently the origin of it is leaving the bed too soon, or attempting to do some work, too much for her strength, shortly after a premature birth or a confinement. Not only should a woman keep her bed, as a rule, for nineteen days after every abortion and every confinement, but for weeks after she commences to move about she should avoid any severe muscular exertion, especially lifting, long walks, straining, or working on the sewing-machine. Straining at stool is one of the commonest causes. Many women have a tendency to constipation for weeks or months after childbirth. They are aware that it is unfavorable to health, and they seek to aid nature by violent muscular effort. They cannot possibly do a more unwise act. Necessarily the efforts they make press the womb forcibly down, and its ligaments being relaxed, it assumes either suddenly on some one well-remembered occasion, or gradually after a succession of efforts, some unnatural position. The same reasoning applies to relieving the bladder, which is connected in some persons with undue effort.

Constipation, if present, must, and almost always can, be relieved by a judicious diet, and the moderate use of injections. These simple methods are much to be preferred to purgative medicines, which are rarely satisfactory if they are continued for much time. When anything more is needed, we

recommend a glass of some laxative mineral water, which should be taken before breakfast.

For the difficulty with the bladder we mentioned, diet is also efficacious. It is familiarly known that several popular articles of food have a decided action in stimulating the kidneys: for instance, asparagus and water-melon. Such articles should be freely partaken, and their effect can be increased by some vegetable infusion, taken warm,—as juniper-tea or broom-tea. The application to the parts of a cloth wrung out in water as hot as it can conveniently be borne, is also a most excellent assistant to nature.

Similar strains on the muscles of the abdomen are consequent on violent coughing and vomiting. Therefore these should be alleviated, as they always can be, by some anodyne taken internally. Any medical man is familiar with many such preparations, so that it seems unnecessary to give any formula, particularly as it would have to be altered, more or less, to suit any given case.

OTHER CAUSES OF INWARD WEAKNESS.

Women of languid disposition and relaxed muscles are frequently urged to 'take exercise,' and to 'go to work.' Their condition sometimes excites censure rather than commiseration, because it is thought that they do not exert, and thus strengthen, themselves as much as they should. We are quite as much in favour of work and vigorous muscles as any one. But often it were the most foolish advice possible to give a woman, to tell her to seek active exercise. It is just what she should avoid, as it may ultimately give rise to that very trouble which,

now only threatening, is the cause of her listlessness. Many instances are familiar to every physician of extensive experience, where a long walk, a hard day's work, a vigorous dance in the evening, or a horseback ride, has left behind it a uterine weakness which has caused years of misery. Especially after confinement or premature delivery it is prudent for a woman to avoid any such exertion for months and months. Moderate employment of her muscles in any light avocation, short walks and drives, fresh air, with judicious exercise,—these are well enough in every instance, but beyond them there is danger. We know too well that advice like this will sound like mockery to some who read these lines. They have to work, and work hard; they have no opportunity to spare themselves; the iron hand of necessity is upon them, and they must obey. We can but sympathize with them, and cheer them with the consolation that many a woman has borne all this and lived to a healthy and happy old age. Nature has surrounded the infinitely delicate machinery of woman's organization with a thousand safeguards, but for all that, the delicacy remains; and it is because so many women are forced to neglect their duties to their ownselves, that so many thousands walk the streets of our great cities, living martyrs.

But no. We must modify what we have just written. In justice to our own sex, and in all truthfulness, we cannot allow the blame to be removed altogether from women themselves. They alone are responsible for one of the most fruitful causes of their wretchedness. The theme is a threadbare one.

We approach it without hardly any hope that we shall do good by repeated warnings utterly monotonous and tiresome. But still less can we feel comfortable in mind to pass it over in silence. We refer to the foolish and injurious pressure which is exerted on the lower part of the chest and the abdomen by tight corsets, belts, and bands to support the under-clothing; in other words,

TIGHT LACING.

Why it is, by what strange freak of fashion and blindness to artistic rules, women of the present day think that a deformed and ill-proportioned waist is a requisite of beauty, we do not know. Certainly they never derived such an idea from a contemplation of those monuments of perfect beauty bequeathed to posterity by the chisels of Attic artists, nor from those exquisite figures which lend to the canvas of Titian and Raphael such immortal fame. Look, for instance, at that work of the former artist, now rendered so familiar by the chromo-lithographic process, called 'Titian's Daughter.' It is the portrait of a blonde-haired maiden holding aloft a trencher heaped with fruits. She turns her face to the beholder, leaning slightly backward to keep her equilibrium. Her waist is encircled by a zone of pearls; and it is this waist we would have our readers observe with something more than an æsthetic eye. It is the waist of health as well as beauty. Narrower than either the shoulders or the hips, it is yet anything than that 'wasplike waist,' which is so fashionable a deformity. With such a waist, a woman is fitted to pass through her mar-

ded state with health and pleasure. There is little fear that she will be the tenant of doctors' chairs, and the victim of drugs and instruments. Let women aim at beauty, let them regard it as a matter of very high importance, worth money and time and trouble, and we will applaud them to the echo. But let them not mistake deformity, vicious shape, unnatural and injurious attitudes, and hurtful distortions for beauty. That not only degrades their physical nature, but it lowers their tastes, and places them in æsthetics on a level with the Indian squaw who flattens her head and bores her nose, and with the Chinese woman who gilds her teeth, and compresses her foot into a shapeless mass. True beauty is ever synonymous with health; and the woman who, out of subservience to the demands of fashion, for years squeezes her waist and flattens her breast, will live to rue it when she becomes a mother. Away, then, with tight corsets and all similar contrivances.

Of a similar objectionable character are many of the devices which ignorant men connected with the medical profession urge upon the public for the sake of remedying curvature of the spine, restoring the figure, or supporting the abdomen. Not a few of such braces and supporters are seriously dangerous. A good brace, well-fitting, carefully adjusted, suited to the particular case, is often of excellent service; but the majority of them do not answer this description. Our advice is, that no girl, and still more no mother, should wear one of these without it is fitted upon her by an experienced hand. We have known more than one instance where the binder put

on after childbirth has been wrongly placed, and pinned so firmly that it has resulted in producing falling of the womb. This, too, should be sedulously looked after.

All these are causes which are strictly under the control of the woman herself. They are therefore such as she should have in mind and be on her guard against. There are others, but they are less frequent, which are beyond her power; and it would be labor lost, therefore, for us to mention them.

Equally vain would it be for us to speak of the various means by which difficulties of this nature are removed. Probably no one branch of medical surgery has been more assiduously cultivated than this; and the number of supporters, pessaries, braces, and levers which have been recently brought before the medical profession for this purpose is simply appalling. There are women and men who make it their business to carry them through the country and sell them on commission. We distinctly warn our readers against this class. They are almost invariably ignorant and unscrupulous, rich in promises, and regardless of performances. She who patronizes them will be sure to lose her money, and will be lucky if she does not forfeit her health also.

The most we shall do is to give some advice how to treat such complaints on principles of hygiene. And indeed this means nearly one-half the battle. For without these simple cares, treatment of any kind is useless, and sure to fail; and with them, many complaints are remedied as well as avoided.

THE HYGIENIC TREATMENT OF INWARD WEAKNESS.

The first point we would urge is, that the woman who finds herself thus afflicted should seek to have such a position that she can *rest*. If she is burdened with family cares, let her, if possible, diminish or escape them for a time. A rest of a month or two, not at a fashionable watering-place, nor at a first-class hotel in some noisy city, but in quiet lodgings, or with some sympathizing friend, will be of great advantage. This she should obtain without travelling too far. Prolonged motion in railway carriages is in every instance injurious. If it must be undertaken, for instance, in order to consult a qualified physician or to reach some friends, the modern appliances of comfort, such as air-cushions, foot-rests, and head-supports, should be provided. They cost but little, and to the invalid their value is great. No such journey should be undertaken at or near the time when the monthly illness might come on, as the suffering is always greater at these periods.

The pleasant associations which group themselves around a *happy home* are an important element in the treatment of diseases which, like these, are so intimately connected with the mind and nervous system. It will not do heedlessly to throw such advantages away. When the home *is* pleasant, and rest can there be had, the patient, in the majority of instances, will do well to abide there. But when this is not the case, for any reason, be it domestic

infelicities, in which the husband has a share,—be it disagreeable relatives, or importunate and tedious visitors,—then the sooner such a mental weight is removed or avoided the better.

The *diet* is a very common subject of error. It is popularly supposed that everybody who is weak should eat a 'strengthening' diet,—meat three times a day,—eggs, ale, and beef-tea to any extent. This is a great error. Frequently such a diet has just the contrary effect from what is expected. The patient becomes dyspeptic, nervous, and more debilitated than ever. The rule is, that only that diet is strengthening which is thoroughly digested, and taken up in the system. Frequently, we may say in the majority of cases, a small amount of animal food, especially game, fowls, fish, and soups, with fresh vegetables, and ripe fruits, will be far more invigorating than heavier foods. Pastry, cakes, and confectionery should be discarded, and great regularity in the hours of meals observed. Stimulants of all kinds are, as a rule, unnecessary, and highly spiced food is to be avoided. There is an old German proverb which says, 'Pepper helps a man on his horse, and a woman to her grave.' This is much too strong; but we may avail ourselves, in this connection, of the grain of truth that it contains.

Cleanliness, in its widest sense, is an important element in the treatment. Not only should the whole surface of the body be thoroughly washed several times a week, but the whole person should be *soaked* by remaining in the water for an hour or more. This has an excellent effect, and is far from unpleasant. It was regarded in the days of

ancient Rome as such a delightful luxury, and such a necessity, indeed, that every municipality erected public bathing establishments, with furnaces to heat the water to such a temperature that persons could remain in it for several hours without inconvenience.

The use of public baths is almost unknown in this country; but, in place of them, every modern house of even moderate pretensions has its own bath-room, so that the custom of cleanliness might appear to be hardly less general among all classes than in old Rome.

The difficulty is, that so few people appreciate that to thoroughly cleanse the skin, still more for the bath to have a medicinal effect, it must be prolonged far beyond the usual time we allow it. The European physicians, who, as a rule, attach much greater importance to this than ourselves, require their patients to remain immersed two, three, four, and occasionally even ten or twelve hours daily! This is said to have most beneficial results; but who would attempt to introduce it in this country?

Local cleanliness is of equal importance. This is obtained by means of—

INJECTIONS AND IRRIGATIONS

of simple water, or of some infusion or solution. The use of the syringe as an article of essential service in preserving the health of married women should never be overlooked. Even when they are aware of no tendency to weakness or unusual discharge, it should be employed once or twice a

week; and when there is debility or disease of the parts actually present, it is often of the greatest service.

There are many varieties of female syringes now manufactured and sold, some of which are quite worthless. Much the most convenient, cleanly, and efficient is the self-injecting india-rubber syringe, which is worked by means of a ball held in the hand, and which throws a constant and powerful stream. They come neatly packed in boxes, occupying small space, and readily transported from place to place. Much depends on knowing how to apply them. The patient should be seated on the edge of a low chair or stool with a hard seat, immediately over a basin. The tube should then be introduced as far as possible without causing pain, and the liquid should be thrown up for five or ten minutes. About one or two quarts may be used of a temperature, in ordinary cases, a little lower than that of the apartment. Water actually cold is by no means to be recommended, in spite of what some physicians say to the contrary. It unquestionably occasionally leads to those very evils which the judicious use of the syringe is intended to avoid.

No fluid but water should be used in ordinary cases. When, however, there is much discharge, a pinch of powdered alum can be dissolved in the water; and when there is an unpleasant odor present, a sufficient amount of solution of permanganate of potash may be added to the water, to change it to a light pink color. This latter substance is most admirable in removing all unpleasant

odors; but it will stain the clothing, and must on that account be employed with caution.

We will add a few warnings to what we have just said about injections. There are times when they should be omitted,—as for instance during the periodical illness, when the body is either chilled or heated, and generally when their administration gives pain. There are also some women in whom the mouth of the womb remains open, especially those who have borne many children. In such cases, the liquid used is liable to be thrown into the womb itself, and may give rise to serious troubles. These should either omit the use of the syringe altogether, or obtain one of those which throw the water backward and not forward. This variety is manufactured and sold by various dealers.

Irrigations are more convenient in some respects than injections. They are administered in the following manner:—A jar holding about a gallon of water, simple or medicated, as may be advisable, is placed upon a table or high stand. A long india-rubber tube is attached to the bottom of the jar, ending in a metallic tube, and furnished with a stopcock. The patient seats herself on the edge of a chair over a basin, introduces the tube, and turns the stopcock. The liquid is thus thrown up in a gentle, equable stream, without any exertion on her part. No assistant is required, and the force and amount of the liquid can be exactly graduated by elevating or lowering the jar, or by turning the stopcock. When there is much debility, or when it is desirable to apply the liquid for a long time this method is much preferable to syringing. The

necessary apparatus can readily be obtained in any large city. It has, however, the drawback that the jar is large, and not convenient to carry on journeys.

We shall close this chapter on Health in Marriage by a few words on some of the *ailments to which mothers are subject while nursing*

GATHERED BREASTS.

Gathering of the breasts may occur at any time during the period of nursing, but it is most frequently met with within the first three months after childbirth, and is more common after the first than after subsequent confinements. All women are more or less liable to it, but those who are weakly, and particularly those who are scrofulous, are most prone to its attacks.

The *causes* of inflammation of the breast are numerous. It may be created by a blow or fall, by a cold, by mental excitement, by indiscretions in eating or drinking, and by moving the arms too much when the breasts are enlarged, but its most common cause is undue accumulation of milk in the breasts. Dr. Bedford is of the opinion that in nineteen cases out of twenty it is the result of carelessness—of neglect in not having the breasts properly drawn. 'For example, the child may be delicate, and not able to extract the milk; or the nurse, in the gratification of some ancient prejudice derived from a remote ancestry, does not think it proper to allow the infant to be put to the breast for two or three days after its birth. In this way the milk ducts become greatly distended, inflamma

tion ensues, which, if not promptly arrested, terminates in suppuration.'

Often the love of pleasure brings with it this punishment to the nursing mother who neglects her maternal duties. During an evening spent in society or at the theatre the breasts cannot be relieved in the manner required for the preservation of their health.

Soreness of the nipples, which renders suckling painful, often leads the mother to avoid putting the child to the breast as often as she should. It is only when forced by the pain in the over-distended parts that she can summon courage to permit of their being emptied. This partial and irregular nursing is very dangerous, and cannot fail, in most cases, to lead to the very painful affection of which we are now speaking.

No nursing mother is safe whose breasts are not properly and daily emptied. If this cannot be done by the child, another infant should be applied, or a small puppy, either of which expedients is preferable to a breast-pump, which, however, is much better than neither. If the tender or chapped condition of the nipples interferes with free nursing, this condition must be promptly remedied. When undue accumulation of milk is threatened gentle friction of the breasts with sweet oil and camphor is also of service ; and they should be supported by means of a handkerchief placed under them and tied over the shoulders.

It must not be forgotten, however, that though *gentle* rubbing afford relief to the breasts when they are hard, knotty, and over-distended, any friction is

urious if gathering has actually commenced. In all cases, therefore, it is of importance to distinguish between over-distension (which may *lead* to inflammation) and a condition of already established gathering of the breasts. This it is not difficult to do. In the former case the skin is pale, there is little or no tenderness, and the hardness is evenly diffused over the whole of the breast; whereas, when gathering has taken place there is a blush of redness on some portion of the breast, which is always painful to the touch, and which will be found to be particularly hard and sore in some one spot.

The *symptoms* of gathered breasts we have just described in part. The severity of the symptoms will depend upon the extent and depth of the inflammation. The affection is always ushered in by shivering, followed by fever and a shooting pain in the breasts. A small, hard, painful swelling will be noticed in the breast even before the skin shows any sign of redness. This swelling increases in size and the suffering becomes very great and difficult to bear, preventing sleep and prostrating the whole system. The secretion of milk is suspended at least during the first active stage of the disease.

The object of *treatment* is to prevent the formation of an abscess by subduing the inflammation as speedily as possible. This is to be sought first by keeping the breast as nearly empty as possible. For this reason the child should be assiduously applied to the affected rather than to the well side, although suckling will be painful. Indeed, it is better, if it can be done, to procure an older child and let it keep the milk under. When, however,

the inflammation is fully established, the pain will compel the restriction of the child to the well side. The application of warmth is both grateful to the part and beneficial. This may be done by means of poultices or fomentations, or by immersing a wooden bowl in hot water and putting the breast, wrapped in flannel, within it. This latter means will be found an easy and agreeable one of keeping up the application of dry heat. The bowels should be briskly purged by a dose of citrate of magnesia or cream of tartar. The diet must be mild, and the breasts supported in a sling. If, in spite of all these efforts, an abscess actually forms, the attending physician will doubtless advise its immediate opening, to which advice the patient should accede, as that is the course which will afford her quicker and more effectual relief than she can hope for from nature's unaided efforts at effecting a discharge of the pent-up matter.

It is interesting for the mother to know that if her child be still-born, or if unfortunately she be unable from any of the reasons mentioned in our chapter on Hindrances to Nursing to give the breast at all to her child, she is not liable to gathering on this account. This is contrary to what might be expected. It is not the mother who is unable to nurse at all who suffers, but she who does so in an unsatisfactory manner and who fails to have her breasts properly emptied.

The first milk which makes its appearance in the breast towards recovery from inflammation is likely to be stringy and thick, and should, therefore, be rejected before nursing is resumed.

THE SINGLE LIFE.

A FEW words, ere we pass to another branch of our subject, on the physical relations of her who by choice or other reasons never marries. It is a common observation among physicians who have devoted themselves to the study of woman's physical nature, that, in spite of those perils of maternity which we have taken no pains to conceal, the health of single women during the child-bearing period is, as a general rule, not better, not even so good, as that of their married sisters. Those insurance companies who take female risks, do not ask any higher premium for the married than the unmarried.

Various suggestions have been made to account for this unexpected fact. Some writers have pointed out that in many diseases marriage exerts a decidedly curative influence, especially in chronic nervous ailments. Chorea, for instance, or St. Vitus's dance, as it is popularly termed, has been repeatedly cured by marriage. As a rule, painful menstruation, which always arises from some defect or disease of the ovaries or adjacent organs, is improved, and often completely removed, by the same act. There are, as is well known, a whole series of emotional disorders,—hysteria, and various kinds of

mania and hallucination,—which are almost exclusively confined to single persons, and only occur in the married under exceptional circumstances. An instance has lately been detailed in the medical journals by a Prussian physician, of a case of undoubted hereditary insanity which was greatly benefited—indeed temporarily cured—by a fortunate nuptial relation. Few who have watched a large circle of lady acquaintances but will have observed that many of them increased in flesh and improved in health when they had been married some months. An English writer of distinction accounts for these favourable results in a peculiar manner. Success, he says, is always a tonic, and the best of tonics. Now, to women, marriage is a success. It is their aim in social life; and this accomplished, health and strength follow. We are not quite ready to subscribe to such a sweeping assertion, but no doubt it is applicable in a limited number of cases. Our own opinion is, that nature gave to each sex certain functions, and that the whole system is in better health when all parts and powers fulfil their destiny.

Common proverbs portray the character of the spinster as peevish, selfish, given to queer fancies, and unpleasant eccentricities. In many a case we are glad to say this is untrue. Instances of noble devotion, broad and generous sympathy, and distinguished self-sacrifice, are by no means rare in single women But take the whole class, the popular opinion, as it often is, must be granted to be correct. Deprived of the natural objects of interest, the sentiments are apt to fix themselves on parrots and

poodles, or to be confined within the breast, and wither for want of nourishment. Too often the history of those sisterhoods who assume vows of singleness in the interest of religion, presents to the physician the sad spectacle of prolonged nervous maladies, and to the Christian that of a sickly sensibility.

In this connection we may answer a question not unfrequently put to the medical attendant. Are those women who marry late in their sexual life more apt to bear living children than the married of the same age; and are they more likely to prolong their child-bearing period by their deferred nuptials? To both these inquiries we answer No. On the contrary, the woman who marries a few years only before her change of life, is almost sure to have no children who will survive. She is decidedly less apt to have any than the woman of the same age who married young. If, therefore, love of children and a desire for offspring form, as they rightly should, one of the inducements to marry, let not the act be postponed too long, or it will probably fail of any such result.

THE CHANGE OF LIFE.

AFTER a certain number of years, woman lays aside those functions with which she had been endowed for the perpetuation of the species, and resumes once more that exclusively individual life which had been hers when a child. The evening of her days approaches; and if she has observed the precepts of wisdom, she may look forward to a long and placid period of rest, blessed with health, —honored, yes, loved with a purer flame than any which she inspired in the bloom of youth and beauty. Those who are familiar with the delightful memoirs of Madame Swetchine or Madame Recamier will not dispute even so bold an assertion as this.

But ere this haven of rest is reached, there is a crisis to pass which is ever the subject of anxious solicitude. Unscientific people, in their vivid language, call it *the change of life;* physicians know it as the *menopause*—the period of the cessation of the monthly flow. It is the epoch when the ovaries cease producing any more ova, and the woman becomes therefore incapable of bearing any more children.

The age at which it occurs is very variable. In this country from forty-five to fifty is the most com-

mon. Instances are not at all unusual when it does not appear until the half century has been turned; and we have known instances where women past sixty still continued to have their periodical illnesses.

Examples of very early cessation are more rare. We do not remember to have met any, in our experience, earlier than thirty years, but others have observed healthy women as young as twenty-eight in whom the flow had ceased.

The physical change which is most apparent at this time is the tendency to grow stout. The fat increases as the power of reproduction decreases. And here a curious observation comes in. We have said that when the girl changes to a woman, a similar deposit of fat takes place (though less in amount), which commences at the loins. This is the first sign of puberty. In the change of life the first sign is visible at the lower part of the back of the neck, on a level with the bones known as the two lowest cervical vertebræ. Here commences an accumulation of fat, which often grows to form two distinct prominences, and is an infallible index of the period of a woman's life.

The breasts do not partake of this increase, but become flat and hard, the substance of the gland losing its spongy structure. The legs and arms lose their roundness of outline, and, where they do not grow fat, dry up, and resemble those of the other sex. The abdomen enlarges, even to the extent occasionally of leading the wife to believe that she is to be a mother,—a delusion sometimes strengthened by the absence of the monthly sick-

ness. Finally, a perceptible tendency to a beard at times manifests itself, the voice grows harder, and the characteristics of the female sex become less and less distinct.

Some who are more fortunate than their neighbours do not experience the least discomfort at the change of life. They simply note that at the expected time the illness does not appear, and for ever after they are free from it. These are the exceptions. More commonly, marked alterations in the health accompany this important crisis, and call for sedulous hygienic care. It is gratifying to know that nearly all these threatening affections can be avoided by such care, as they depend upon causes under the control of the individual. Another fact, to which we have already referred, is full of consolation. It is an unexpected fact—one that we should hardly credit, did it not rest on statistical evidence of the most indisputable character. The popular opinion, every one knows, is, that the period of the change of life is one peculiarly dangerous to women. If this is so, we might expect that, if the number of deaths between the ages of forty and fifty years in the two sexes be compared, we should find that those of females far exceed those of males. This is, however, not the case. On the contrary, the deaths of the males exceed in number those of the females.

Hasty readers may draw a false conclusion from this statement. They may at once infer that the change of life merits little or no attention, if it thus in nowise increases the bills of mortality. This would be a serious error All intelligent physicians

know that there are in very many cases a most unpleasant train of symptoms which characterize this epoch in the physical life of woman. They are alarming, painful, often entailing sad consequences, though rarely fatal. All physicians are, however, not intelligent; and there are too many who are inclined to ridicule such complaints, to impute them to fancy, and to think that they have done their full duty when they tell the sufferer that such sensations are merely indicative of her age, and that in a year or two they will all pass away. Such medical attendants do not appreciate the gravity of the sufferings they have been called to relieve. Says a distinguished writer on the subject, after entering into some details in the matter: 'I would not dwell on things apparently so trivial as these, had I not seen some of the worst misery this world witnesses induced thereby.' Such a conviction should be in the mind of the physician, and lead him to attach their full weight to the vague, transitory, unstable, but most distressing symptoms described to him.

SIGNS AND SYMPTOMS.

We shall speak of the various signs and symptoms which occur at and mark the change; and in commencing so to do, we call attention to an interesting illustration of the rhythm which controls the laws of life. As in old age, when we draw near the last scene of all, we re-enter childhood, and grow into second infancy, so the woman, finishing her pilgrimage of sexual life, encounters the same landmarks and stations which greeted

her when she first set out. She obeys at eve the voice of her own nature which she obeyed at prime. The same diseases and disorders, the same nervous and mental sensations, the same pains and weaknesses which preceded the first appearance of her monthly illness, will in all probability precede its cessation. Even those affections of the skin or of the brain, as epilepsy, which were suffered in childhood, and which disappeared as soon as the periodical function was established, may be expected to reappear when the function has reached its natural termination. Therefore if a woman past the change notices that she suffers from bleeding at the nose, headache, boils, or some skin disease, let her bethink herself whether it is not a repetition of some similar trouble with which she was plagued before the eventful period which metamorphosed her from a girl into a woman.

So true is what we have just said, that in detailing the symptoms which frequently occur at the change of life, we could turn back to the previous pages where we discussed the dangers of puberty, and repeat much that we there said as of equal application here. For instance, the green-sickness, *chlorosis*, is by no means exclusively a disease of girls. It may occur at any period of child-bearing life, but is much more frequent at the *beginning* and the *end* of this term. Hardly any one has watched women closely without having observed the peculiar tint of skin, the debility, the dislike of society, the change of temper, the fitful appetite, the paleness of the eye, and the other traits that show the presence of such a condition of the ner-

vous system in those about renouncing their powers of reproduction. The precautions and rules which we before laid down, can be read with equal profit in this connection.

In addition to these symptoms, which in a measure belong to the individual's own history, there are others of a general character which betoken the approaching change. One of them is an increasing irregularity in the monthly appearance. This is frequently accompanied with a sinking sensation,—a 'feeling of goneness,' as the sufferer says—at the pit of the stomach, often attended by flushes of heat, commencing at the stomach and extending over the whole surface of the body. The face, neck, and hands are suffused at inopportune moments, and greatly to the annoyance of the sufferer. This is sometimes accompanied by a sense of fulness in the head, a giddiness, and dulness of the brain, sometimes going so far as to cause an uncertainty in the step, a slowness of comprehension, and a feeling as if one might fall at any moment in some sort of a fit.

This is not the worst of it. These physical troubles react upon the mind. An inward nervousness, intensely painful to bear, is very sure to be developed. She fears she will be thought to have taken liquor, and to be overcome with wine; she grows more confused, and imagines that she is watched with suspicious and unkind eyes, and often she worries herself by such unfounded fancies into a most harassing state of mental distress. Society loses its attractions, and solitude does but allow her opportunity to indulge to a still more in-

jurious extent such brooding phantasms. Every ache and pain is magnified. Does her heart palpitate, as it is very apt to do? Straightway she is certain that she has some terrible disease of that organ, and that she will drop down dead some day in the street. Is one of her breasts somewhat sore, which, too, is not unusual? She knows at once it is a cancer, and suffers an agony of terror from a cause wholly imaginary.

Vibrating between a distressing excitement and a gloomy depression, her temper gives way; and even the words of the Divine Master lose their influence over her. She becomes fretful, and yet full of remorse for yielding to her peevishness; she seeks for sympathy, without being able to give reasons for needing it; she annoys those around her by groundless fears, and is angered when they show their annoyance. In fine, she is utterly wretched, without any obvious cause of wretchedness.

This is a dark picture, but it is a true one—inexorably true. Let us hasten to add that such a mental condition is, however, neither a necessary nor a frequent concomitant of the change. We depict it, so that friends and relatives may better appreciate the sufferings of a class too little understood, and so that women themselves, by knowing the cause of such complaints, and the sad results which flow from them, may make the more earnest efforts to avoid them.

Other symptoms are, a sense of choking, a feeling of faintness, shooting pains in the back and loins, creepings and chilliness, a feeling as if a hand

were applied to the back or the cheek, a fidgety restlessness, inability to fix the mind on reading or in following a discourse, and a loss of control over the emotions, so that she is easily affected to tears or to laughter. All these merely indicate that nature is employing all her powers to bring about that mysterious transformation in the economy by which she deprives the one sex for ever of partaking in the creative act after a certain age, while she only diminishes the power of the other.

EFFECTS ON THE CHARACTER.

The effects on the character of this 'grand climacteric' are often marked. Not unfrequently the woman becomes more masculine in thought and habit, as has been admirably described by Dr. Tilt:—'There are almost always while the change is progressing various forms of nervous irritability and some amount of confusion and bewilderment, which seem to deprive women of the mental endowments to which they had acquired a good title by forty years' enjoyment. They often lose confidence in themselves, are unable to manage domestic or other business, and are more likely to be imposed on either within or without the family circle. When the change is effected, the mind emerges from the clouds in which it has seemed lost. Thankful that they have escaped from real sufferings, women cease to torture themselves with imaginary woes, and as they feel the ground grow steadier underfoot, they are less dependent on others—for, like the body, the mental faculties then assume a masculine character. The change of life does not give talents,

but it often imparts a firmness of purpose to bring out effectively those that are possessed, whether it be to govern a household, to preside in a drawing-room, or to thread and unravel political entanglements. When women are no longer hampered by a bodily infirmity periodically returning, they have more time at their disposal, and for obvious reasons they are less subject to be led astray by a too ardent imagination, or by wild flights of passion.'

Changes in the moral character also frequently show themselves, and for a time astonish friends and relatives. These shades of moral insanity all disappear in a little while, if there be no family tendency to insanity to prolong and intensify them.

THOSE WHO SUFFER MOST.

Those women especially may anticipate serious trouble at this epoch in whom the change at puberty was accompanied by distressful and obstinate disorders,—those in whom the menstrual periods have usually been attended with considerable pain and prostration, and those in whose married life several abortions or several tedious and unnatural labors have occurred; also those who from some temporary cause are reduced in health and strength,—as from repeated attacks of intermittent fever, or disorders of the liver and digestive organs. Still more predisposed are they who are subject to some of those displacements or local ulcerations which we have mentioned in our chapter on Health in Marriage. It becomes of great consequence that any

such deviation from the healthy standard shall be corrected before a woman reaches this trying passage in her career.

The constitution and temperament have much to do with the liability to disease and suffering during the change of life. Those of weak constitutions sometimes fail of the necessary stamina to carry them easily through the trials of this transition period. It has been remarked that the *lymphatic* temperament is the most favorable to an easy change. Women with this temperament suffer less from nervous or bilious disorders, and quickly show signs of having been benefited by what has occurred. Those of a *sanguine* temperament are more liable to floodings and to head symptoms; but such disorders with them usually readily yield to treatment. The *bilious* temperament predisposes to disorders of the stomach and liver at this epoch; while the union of the nervous with the bilious temperament seems to predispose to mental diseases. The most suffering at this time of life is experienced by women of a *nervous* temperament.

The social position exerts an influence on the pain and the tendency to disease at this epoch. The poor who are forced to labor beyond their strength and who are exhausted by fatigue, anxiety, and want, suffer much. So also do those who have recently been exposed to some great sorrow. As the poet says:—

> Danger, long travel, want, or woe,
> Soon change the form that best we know ——

For deadly fear can time out-go,
And blanch at once the hair.
Hard toil can roughen form and face,
And want can quell the eye's bright grace,
Nor does old age a wrinkle trace
More deeply than despair.

The occupations of women also have an influence upon the change of life. Washerwomen are said in particular to suffer more than others on account of the exposure to which they are subject by their trade. Those who are confined many hours a day in close or damp rooms are unfavorably situated for passing through the various stages of the 'grand climacteric.' The rich, with plenty of time and means to care for themselves, often blindly or obstinately create an atmosphere about them and follow a mode of life, quite as deleterious as the enforced surroundings of their poorer sisters.

DISEASES AND DISCOMFORTS.

In rather more than one out of every four cases the change of life is either ushered in or accompanied by considerable flooding. When this occurs at the regular period, and is not in sufficient quantity to cause debility, and is not associated with much pain, it need not give rise to any alarm. It is an effort of nature to relieve the impending plethora of the system, to drain away the excessive amount of blood which would otherwise accumulate by the cessation of the flow. When it is remembered that every month, for some thirty years of life, the woman of forty-five has been moderately bled, we need not wonder that suddenly to break

off this long habit would bring about a plethora, which would in turn be the source of manifold inconveniences to the whole system. Therefore this flooding may be regarded as a wise act of nature, and, as such, allowed to take its course so long as it is not attended with the symptoms mentioned above. When this is the case, however, the doctor should be consulted, as then the bleeding may be from inflammation or ulceration, or even from that dreaded foe to life, cancer.

Instead of finding this exit, the blood occasionally is thrown off by bleeding at the nose, or is spat up from the lungs, or is passed from bleeding piles. Due caution must be used about stopping such discharges too promptly. Rest, cool drinks, and the application of cold to the parts, are generally all that is needed.

We have just spoken of cancer. This is a subject of terror to many women, and their fears are often increased and deliberately played upon by base knaves who journey about the country calling themselves 'cancer doctors,' and professing to have some secret remedy with which they work infallible cures. It should be generally known that all such pretensions are false. It is often a matter of no little difficulty, requiring an experienced eye, to pronounce positively whether a tumour or ulcer is cancerous. These charlatans have no such ability; but they pronounce every sore they see a cancer, and all their pretended cures are of innocent, non-malignant disorders Cancers are more apt to develope themselves at this period. Their seat is most frequently in the womb or the breast, and they are

said to be especially liable to arise in those women who have suffered several abortions or unnatural labours. Undoubtedly they are more frequent in the married than the unmarried, and they evidently bear some relation to the amount of disturbance which the system has suffered during childbirth, and the grief and mental pain experienced. For this reason a celebrated teacher of obstetrics insists upon classing them among nervous diseases. The surgeon alone can cure them, and he but rarely. Medicine is of no avail, however long and painstaking have been its searches in this direction. A touching story is related in this connection of Raymond Sully, the celebrated philosopher. When a young man, he was deeply impressed with the beauty of a lady, and repeatedly urged his suit, which she as persistently repelled, though it was evident she loved him. One day, when he insisted with more than usual fervor that she should explain her mysterious hesitation, she drew aside the folds of her dress and exposed her breast, partly destroyed by a cancer. Shocked and horrified, but unmoved in his affection, he rushed to the physicians and demanded their aid. They replied they could give none. He determined to find a cure, if he had to seek in all parts of the earth. He visited the learned doctors of Africa and Asia, and learned many wonderful things—even, it was said, the composition of the philosopher's stone itself; but what he did not find, and what has never yet been found, was what he went forth to seek—a cure for cancer.

At this time, too, tumors or swellings of the

ovaries are apt to commence. They are nearly always preceded by scanty or painful menstruation; and this, therefore, it is the duty of every woman, as she values the preservation of her future health, to remedy by every means in her power.

Generally, from the commencement of the change of life commences also a steady diminution of the sexual passions, and soon after this period they quite disappear. Sometimes, however, the reverse takes place, and the sensations increase in intensity, occasionally exceeding what they even were before. This should be regarded with alarm. It is contrary to the design of nature, and can but mean that something is wrong. Deep-seated disease of the uterus or ovaries is likely to be present, or an unnatural nervous excitability is there, which, if indulged, will bring about dangerous consequences. Gratification, therefore, should be temperate, and at rare intervals, or wholly denied.

PRECAUTIONS AND REMEDIES.

To guard against the dangers of this epoch, those general rules of health which we have throughout insisted upon should be rigidly observed. If during the whole of her sexual life the woman has been diligent in observing the laws of health, she has little to fear at this period. Some simple remedies will suffice to allay the disagreeable symptoms; and the knowledge that most of them are temporary, common to her sex, and not significant of any peculiar malady, will aid her in opposing their attacks on her peace of mind.

When plethora, flooding, or congestion is apparent, the food should be light, chiefly vegetable, and moderate in quantity. Liquors, wines, strong tea, coffee, and chocolate should be avoided; an occasional purgative or a glass of some laxative mineral water should be taken, and cool bathing regularly observed. Exercise should be indulged in with caution, and care taken to avoid excitement, severe mental or bodily effort, and exhaustion. If the system is debilitated, and the danger is rather from a want of blood than too much blood, nourishing food, tonic medicines, and perhaps some stimulant, are called for. When the perspiration is excessive, flannel should be worn next the skin in the daytime, and a flannel night-dress at night. A tepid bath before retiring is also useful. The 'goneness' and other unpleasant sensations referred to the pit of the stomach may be much relieved by wearing a well-made spice-plaster over the stomach, or binding there a bag of gum camphor; or if these fail, an opium plaster will hardly fail to be of service. Internally, we think, nothing at all is needed; but as something must be taken, let it not be spirits or wine, but half a tea-spoonful of aromatic spirits of ammonia in a few table-spoonfuls of water. There is too much of a tendency among some women to seek alleviation in intoxicating compounds, 'bitters,' 'tonics,' and so forth, at such times. They can only result in injury, and should be shunned. The pains in the back and loins often experienced, can generally be removed by rubbing the parts with hot mustard-water and taking a gentle purgative, or by placing against the lower

part of the spine a hot brick wrapped in a flannel cloth wrung out in warm water or laudanum and water.

Once safely through this critical period, the woman has a better chance for long life and a green old age than the man of equal years. Tables of human life show this conclusively. With the sweet consciousness of duty performed, she is now prepared to assist others by intelligent advice, cheerful counsel, and tender offices; she can now surround herself with that saintly halo of kind words and good works which wins a worthier love than passion offers; and, passing onward to the silence of eternal rest, she will leave in the memory of all who knew her, pleasant impressions and affectionate reminiscences.

NOTES.

P. 20. HERMAPHRODITES AND ASEXUALISM.—Rokitansky decides Hohmann to be a case of *hermaphrodita vera lateralis*, and all who examine her say the same. See *Wiener Medicin. Wochenschrift*, October, 1868, and the *Medical and Surgical Reporter*, vol. xix. p. 487. A marked case of asexualism, proven so by a *post mortem* examination, is reported in the *Buffalo Medical and Surgical Journal* for April, 1869, p. 338; and another in the *Medical Times and Gazette* of about the same date. We might refer to many more recent and authentic cases.

P. 25. AGE OF PUBERTY.—See case by Dr. T. H. Twiner, in the *Richmond and Louisville Medical Journal*, March, 1869, Raciborski, *De la Menstruation et de l'Age Critique chez la Femme*, p. 130. The quotation (p. 26) is from Dr. Edward Smith, *Cyclical Changes in Health and Disease*, —a profound work. Raciborski is the principal authority for this and the following section. Our own inquiries fully confirm his statements.

P. 32. INFLUENCE OF THE MOON ON MENSTRUATION. —On this question, see the researches of M. Parchappe, *Comptes Rendus de l'Académie des Sciences*, tom. xvi. p. 550. See also Dr. Shrye, *Tractatus de Fluxu Menstruo*, in the *Acta Lipsiensia* for 1686, p. 111; Dr. W. Charleton, *Inquisitio Physica de Causis Catameniorum*, p. 78; and Galen, *De Diebus Decretoriis*, lib. iii., for other curious particulars.

P. 37. CHLOROSIS.—For the pathology of this disease, see Dr. Gaillard Thomas, *Diseases of Women*, p. 625, and Dr.

C. H. Bauer, in the *Weiner Medicin. Zeitung*, No. 33, 1868. Occasionally the change at puberty leads to an affection very closely resembling typhoid fever, but which is strictly due to the sexual crisis; and often goitre commences at this period. See a review of Raciborski, in the *Bulletin de Therapeutique*, June, 1869.

P. 39. MASTURBATION IN GIRLS.—See Miss Catherine E. Beecher, *Letters to the People on Health and Happiness*, p. 159. The late medical literature on the subject is abundant. See *Ueber die Behandlung der Masturbation bei kleinen Mädchen, Journal jür Kinderkrankheiten*, Bd. li. p. 360; H. R. Storer, *Western Journal of Medicine*, July, 1868; and *Journal of the Gynæcological Society*, vol. i. No. 1.

Pp. 50, 51. PREMATURE MARRIAGES.—See Dr. Duncan, *Fecundity, Fertility*, etc., p. 241; Reich, *Natur und Gesundheitslehre des Ehelichen Lebens*, p. 518.

P. 56. HOLY LOVE.—The distinction between ἀγάπη and φιλή is too familiar to all scholars to need extended mention See Trench, *Synonyms of the New Testament, sub voce.*

Pp. 57, 58. SINGLE LIFE IN ITS RELATION TO SANITY AND MORTALITY.—The extraordinary statements in the text are vouched for by Dr. Casper, *Medicinische Statistik*, vol. ii. p. 164, and Dr. Reich, *Geschichte, Natur, und Gesundheitslehre des Ehelichen Lebens*, pp. 510, 511. We have compared the reports of a number of asylums for the insane, and find the proportions very nearly as great as stated by these authorities

P. 70. INTERMARRIAGE OF RELATIVES.—The view we advocate on this point, we know, is neither the received nor the popular one In the middle ages it was forbidden to intermarry within the seventh degree of consanguinity; but this and all other regulations were based on theological and political, not physiological, grounds. Among others, Dr. Nathan Allen has insisted on the danger of consanguineous

marriages (*Journal of Psychological Medicine*, Volume ii). But other very careful and recent students adopt the view of our text: for instance, Dr. F. J. Behrend, *Journal für Kinderkrankheiten*, December, 1868, p. 316; Dr. A. Voisin, in the reports of the *Paris Académie de Médecin*, 1864, 1865, and 1868; and Dr. H. Gaillard, in the last edition (1868) of the *Dictionnaire de Médecine et de Chirurgie Pratique*. All the statements in the text are supported with incontrovertible evidence by these writers. If we are asked how to meet the seemingly alarming array of allegations by Dr. Bemiss, the Kentucky physician referred to in the *Transactions of the American Medical Association* for 1859, we would refer to Dr. Behrend's articles, where the researches of Bemiss are severely criticised. For Dr. Edward Smith's assertion, see his *Essay on Consumption*, p. 244 (Philadelphia, 1865).

P. 80. COMMUNICATION OF VENEREAL DISEASES.—Many instances are recorded where a drinking-glass, a spoon, a fork, or a handkerchief has infected innocent persons with these terrible diseases (see Cullerier, *Atlas of Venereal Diseases*, p. 43). They are communicated from the male to the female, or from the female to the male, with equal facility, and either parent can transmit them to the children. The physician referred to is Dr. Sigmund, in the *Humboldt Medical Archives*, 1868.

P. 83. SYMBOLISM.—See Dr. Carus, *Symbolik der Menschlichen Gestalt*, the most scientific work ever written on physiognomy, phrenology, and allied subjects.

Pp. 90, 91.—See Raciborski, *De la Puberté et de l'Age Critique chez la Femme*, p. 133; Tilt, *Uterine Therapeutics*, p. 315.

P. 94. CONTAGION OF PHTHISIS.—See Dr. William A. Hammond's *Treatise on Hygiene*, p. 438, for air-space required by a healthy person. The contagion of phthisis is maintained by many authorities—among others, Dr. W. W. Gerhard (see Pennsylvanian Hospital Reports for 1868, p.

266). Professor Castan has recently collected, in the *Montpelier Medicale*, a variety of facts which seem to show that tuberculosis may be communicated from a diseased to a healthy person by transpiration, breathed air, and living together (*Press and Circular*, March 10, 1869). In regard to the inoculation of tubercle, we have reference to the well-known experiments of M. Villemin, of the Hôpital Val-de-Grace, Paris. In this connection we may record an instance of recent medical heroism. M. Lespiaud, attached to the surgical department of the Val-de-Grace, in presence of several of his colleagues, extracted granular matter from the body of a phthisical subject, and introduced it under his own integument. This zealous investigator into the etiology of tuberculosis has thus exposed himself in a courageous way for the benefit of science, to the effects of a most dangerous and merciless disease.

P. 96. THE DIGNITY AND PROPRIETY OF THE SEXUAL INSTINCT.—Dr. Edward John Tilt is the medical writer referred to (see *Uterine Therapeutics*, pp. 95, 313). See also Bosquet, *Noveau Tableau de l'Amour Conjugal*, vol. ii. p. 2, etc.; Rousel, *Système Physique et Moral de la Femme*, p. 211; Menville, *Histoire Médicale et Philosophique de la Femme*, vol. i. p. 36 *et seq.*; Raciborski, *De la Puberté*, etc., p. 45.

P. 99 ON THE INDULGENCE AND RESTRAINT OF SEXUAL DESIRE.—Menville, vol. ii. p. 91; Bosquet, vol. ii. p. 280; *Economy of Life—or, Food, Repose, and Love*, by George Miles. Dr. Edward Smith, in his valuable work on *Cyclical Changes in Health and Disease*, has collected extensive statistics showing the effect of the time of conception on the viability of the fœtus. The quotation is from Carpenter's *Human Physiology*, p. 753.

P 103. See *Lancet* for March 6, 1869, p. 337, for report of discussion in the Pathological Society of London upon the physical degeneracy resulting from procreation during intoxication. Authorities could be cited at length upon this sub-

ject, but it is not necessary. See Hufeland's *Art of Prolonging Life*, p. 207.

Pp. 106—114. STERILITY.—For statistics referred to, see Dr. Matthews Duncan, *Fecundity, Fertility, and Sterility* (Edinburgh, 1866), p. 181 *et seq.*; Dr. Tilt, *Uterine Therapeutics*, p. 291; Dr. Edward Reich, *Gesundheitslehre des Ehelichen Lebens*, Th. ii.

Dr. J. Marion Sims, *On the Microscope as an Aid in the Diagnosis and Treatment of Sterility*, *New York Medical Journal*, January 1869, p. 406; Charles Darwin, *The Variation of Animals and Plants under Domestication*, vol. ii. p. 198; *Philadelphia Medical and Surgical Reporter*, November 2, 1867, p. 384; A. Debay, *Hygiène et Physiologie du Mariage*, p. 288 (Paris, Quarante-quatrième édition); Raciborski, *De la Puberté*, etc., p. 451; Virey, *De la Femme sous ses Rapports Phys.*, etc., p. 332; Dr. Gunning S. Bedford, *The Principles and Practice of Obstetrics*, p. 107.

P. 115. THE LIMITATION OF OFFSPRING.—We have taken great pains to avoid giving false or dangerous impressions in this section. The references in the order of quotation are:—Dr. Tilt, *Hand-Book of Uterine Therapeutics*, p. 317; Dr. Duncan, *Fecundity, Fertility, Sterility, and Allied Topics*, pp. 289, 290; Dr. Hillier, *Diseases of Children*, p. 114; John Stuart Mill, *Principles of Political Economy*, p. 591; Dr. Drysdale, *London Medical Press and Circular*, December, 1868, p. 478; Raciborski, *De l'Age Critique chez la Femme*, p. 484; *The Nation*, June 1869; Dr. Edward Reich, *Natur und Gesundheitslehre des Ehelichen Lebens*, p. 493; *Boston Medical and Surgical Journal*, February 1867; *Philadelphia Medical and Surgical Reporter*, vol. xix. p. 305; Sismondi, *Principles of Political Economy*, book vii. chap. v.; Dr. MacCormac, in *London Medical Press and Circular*, March 1869, p. 244; Dr. Gaillard Thomas, *Diseases of Women*, p. 58; *Leavenworth Medical Herald*, April, 1867; Dr. N. K. Bowling, in *The Nashville Journal of Medicine and Surgery*, October 1868. We have rather let others speak than spoken ourselves, and have collected the opinions of many most distinguished physicians and statesmen, who thus pronounce

against excessive childbearing. Any intelligent physician will acknowledge the weight to be assigned to such names

P. 128. SIGNS OF FRUITFUL CONJUNCTION.—Carpenter, *Human Physiology*, p. 772; Dr. Gunning S. Bedford, *Principles and Practice of Obstetrics*, p. 304; Menville, vol. i. p. 295; Montgomery, *Signs and Symptoms of Pregnancy*, p. 90.

P. 132. INHERITANCE.—Darwin, *Animals and Plants under Domestication*, pp. 42, 473; Sir Henry Holland's *Medical Notes and Reflections*, p. 30; Pritchard, *Researches into the Physical History of Mankind*, vol. ii. p. 551; Carpenter, *Human Physiology*, p. 779; A. Debay, *Hygiène et Physiologie du Mariage*, p. 173; Fleurens, *De la Longévité et de la Quantité de Vie sur le Globe*, p. 256 (Paris, 1860); Hufeland, *Art of Prolonging Life*, pp. 91, 206; Hammond's *Hygiene*, p. 116; *American Journal of Medical Sciences*, July, 1865, p. 82; Francis Galton, *On Hereditary Talent and Character*, in *Macmillan's Magazine*, vol. xii. pp. 157, 318; Madden, *The Infirmities of Genius*, vol. ii. p. 107; *Lancet*, December 22, 1868, p. 825; *The British Medical Journal*, January 11, 1868, p. 25; Dr. Prosper Lucas, *Traité de l'Hérédité Naturelle;* Victor Hugo, *L'Homme qui Rit*, le seconde chapitre préliminaire; Watson's *Practice*, p. 1153; Dr. Daniel G. Brinton, *Guide-Book to Florida and the South*, Pt. iii.; Dr. J. V. C. Smith, *Physical Indications of Longevity in Man.*

P. 163. PLURAL BIRTHS.—Duncan, *Fecundity, Fertility, and Sterility*, p. 69; Ramsbotham, *System of Obstetrics*, p. 461; *Philadelphia Medical and Surgical Reporter*, vol. xix. p. 508, xx. p. 98.

P. 167. PREGNANCY.—Menville, i. p. 299; Dr. Gunning S. Bedford, *System of Obstetrics*, p. 144 *et seq.;* Montgomery, *Signs and Symptoms of Pregnancy;* Dr. Edward Rigby, *System of Midwifery*, p. 47.

P. 180. MOTHERS' MARKS.—See a very interesting article by Professor Wm. A. Hammond, in *The Quarterly Journal of Psychological Medicine and Medical Jurisprudence*, Janu-

ary, 1868, p. 1, in which he says, in regard to the influence of the maternal mind over the fœtus *in utero:* 'The chances of these instances, and others which I have mentioned, being due to coincidence, are infinitesimally small; and though I am careful not to reason upon the principle of *post hoc ergo propter hoc*, I cannot—nor do I think any other person can, no matter how logical may be his mind—reason fairly against the connection between cause and effect in such cases. The correctness of the facts only can be questioned: if these be accepted, the probabilities are thousands of millions to one, that the relation between the phenomena is correct.' See also Dr. J. Lewis Smith, *Diseases of Infancy and Childhood*, 1869, p. 21; *Philadelphia Medical and Surgical Reporter*, vol. xix. p. 359.

Pp. 192-197. CONCURRENT PREGNANCIES.—Raciborski, *De la Puberté*, etc., p. 491; Dr. Gunning S. Bedford, *System of Obstetrics*, p. 442; *Dict. des Sciences Médicales*, t. L. iii.; *Lancet*, August, 1856, p. 131; Carpenter, *Human Physiology*, p. 779; Beck's *Elements of Medical Jurisprudence*, art. 'Superfœtation;' Rokitansky, *Pathological Anatomy; Philadelphia Medical and Surgical Reporter*, May 1, 1869, p. 335. —Professor Pancost removed some years since, from the cheek of a child some months old, a rudimentary second child.

P. 198. CAN THE FŒTUS CRY IN UTERO?—Dr. Bedford *Obstetrics*, p. 264; *Lancet*, January 23, 1869.

P. 199. IS IT A SON OR DAUGHTER?—*Philadelphia Medical and Surgical Reporter*, vol. xvii. p. 495; Dr. Frankenhauser, in the *Monatschrift für Geburtskunde;* Dr. Packman, *On Impregnation*, *Lancet*, July 18, 1863.

P. 202. GARDNER PEERAGE CASE.—Dr. Bedford, *System of Obstetrics*, p. 299.

P. 204. PROLONGED PREGNANCIES.—Taylor, *Medical Jurisprudence*, p. 586; *Report of Proceedings against the Rev. Fergus Jardine* (Edinburgh, 1839).

P. 207. CARE OF HEALTH DURING PREGNANCY.—Churchill, *On Women*, p. 451; Menville, ii. 114; Tilt's *Elements of Health*, p. 271.

P. 236. To have Labor without Pain.—Professor T Gaillard Thomas says, 'The rule should be to employ an anæsthetic in every case of labor, *during the second stage*, unless some contra-indication exists. After a delivery, under its influence patients recover more rapidly, are freer from complications, and show fewer signs of prostration.' See *Lecture on the Management of Women after Parturition*, in the *Richmond and Louisville Medical Journal*, February, 1869, p. 145.

P. 238. Weight and Length of new-born Children. —*Philadelphia Medical and Surgical Reporter*, vol. xix. p. 388; Carpenter, *Human Physiology*, p. 810; Ramsbotham, *Obstetrics*, p. 111; *Detroit Review of Medicine and Pharmacy*, March, 1869, p. 150.

P. 271. The Child.—Dr. J. Lewis Smith, *A Treatise on the Diseases of Infancy and Childhood*, 1869, p. 28 *et seq.*; Dr. Thomas Hillier, *Clinical Treatise on the Diseases of Children*, p. 17; Dr. Edward Smith, *Cyclical Changes in Health and Disease*; Dr. John Marshall, *Outlines of Physiology, Human and Comparative*, pp. 761, 765, 998; Dr. Charles A. Cameron, *Lectures on the Preservation of Health*, 1868, p. 174; Dr. Charles J. B. Williams, *Principles of Medicine*, p. 480; Dr. J. Forsyth Meigs, *Diseases of Children*; Dr. E. J. Tilt, *Elements of Health and Principles of Female Hygiene*, p. 50 *et seq.*; Dr. Andrew Combe, *The Management of Infancy*, p. 73 *et seq.* (ninth ed. Edinburgh, 1860), *Report of Board of Health of Philadelphia* for 1868, p. 43; *British and Foreign Medico-Chirurgical Review*, April 1868, pp. 382, 454; *Southern Journal of the Medical Sciences*, November, 1867, p. 555; Dr. Thomas Hawkes Tanner, *Practice of Medicine*, p. 108; Dr. William A. Hammond, *Treatise on Hygiene*, p. 95 *et seq.*; *Philadelphia Medical and Surgical Reporter*, vol. xvi. p. 530, xix. pp. 37, 59, 119, 134, 382; Edward C. Seaton, M.D., *A Hand-Book of Vaccination*; Professor J. B. Fonssagrives, *L'Education Physique des Filles*; *Le Rôle des meres dans les maladies des Enfants*; Sir James Y. Simpson, *Selected Obstetrical and Gynæcological Works*, etc., etc.

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TESTIMONIALS

OF

EMINENT MEN AND OF THE PRESS

TO THE

PHYSICAL LIFE OF WOMAN

AND ITS AUTHOR.

Of the *very numerous* testimonials in our hands we select those of earlier date in preference, as showing the acumen of the writers and the warmth with which they welcomed the book.

FROM WILLIAM A. HAMMOND, M.D.,

Late Surgeon-General of U. S. Army; Professor of Diseases of the Mind and Nervous System and of Clinical Medicine in the Bellevue Hospital Medical College, New York.

NEW YORK, Aug. '69.

DR. NAPHEYS—

Dear Sir: I have read with much interest and satisfaction your very admirable book on "The Physical Life of Woman." I am glad that the subject has been taken up by one who shows himself so thoroughly qualified for the task, and I trust the instruction and advice contained in the volume will reach every woman in the land.

Yours, sincerely,

WILLIAM A. HAMMOND.

FROM REV. HENRY WARD BEECHER.

BROOKLYN, N. Y., Sept. 1869.

DR. GEO. H. NAPHEYS—

Dear Sir: I have examined your volume, "The Physical Life of Woman," and desire to thank you for performing a work so long needed, so difficult to perform, and now, at length, so well done by you. Every mother should have this book, nor should she suffer a child to be married without the knowledge which this work contains.

Thousands have dragged through miserable lives and many have perished for want of such knowledge. It is to be hoped, too, now that these delicate topics have been so modestly and plainly treated, that your work will supersede the scores of ill-considered and often mischievous treatises addressed "to the married," which too often serve the lusts of men under the pretence of virtue.

HENRY WARD BEECHER.

FROM REV. HORACE BUSHNELL, D.D.

HARTFORD, CONN., Sept. 1869.

GEO. H. NAPHEYS, M.D.—

Dear Sir: I have read a large part of your book with interest. I shrink from expressing any estimate of it as respects its physiological merit, but it seems to be a book well studied, and it is written with much delicacy and a careful respect, at all points, to the great interests of morality. It will certainly be a great help to intelligence on the subject, and ought, therefore, to be correspondingly useful.

Very respectfully yours,

HORACE BUSHNELL.

FROM HARVEY L. BYRD, M.D.,

Professor of Obstetrics in the Medical Department of Washington University of Baltimore, Maryland.

BALTIMORE, Sept. 1869.

DR. GEO. H. NAPHEYS, Philadelphia—

Dear Sir: I have examined with much pleasure and satisfaction your work on "The Physical Life of Woman," and do not hesitate to commend it most warmly to our countrywomen, for whose benefit it is intended. I congratulate you on the felicitous manner in which you have treated so difficult a subject, and would recommend it to the public as supplying a want that has long been felt in this country.

Omne verum utile dictu, and what can be more proper or more useful than that woman should be made acquainted with the great laws of her being and the duties for which she was created?

Very respectfully, your obed't servant,

HARVEY L. BYRD.

EXTRACT FROM LETTER RECEIVED FROM EDWIN M. SNOW, M.D., OF PROVIDENCE, RHODE ISLAND.

PROVIDENCE, Sept. 1869.

DR. NAPHEYS—

Dear Sir: I have examined with much interest the advance sheets of your book, "The Physical Life of Woman;" I am highly pleased with it. The advice given seems to me to be generally correct, and judiciously expressed; and, in my opinion, the wide circulation of the book would be a benefit to the community,

Truly yours,

EDWIN M. SNOW.

FROM REV. GEORGE ALEX. CROOKE, D.D., D.C.L.

PHILADELPHIA, Sept. 1869

DR. GEO. H. NAPHEYS—

Dear Sir: I have carefully read your work entitled "The Physical Life of Woman," and, as the result, I must candidly say that I believe the information it contains is well calculated to lessen suffering and greatly benefit the human race. I know there are some falsely fastidious persons who would object to any work of the kind, but "to the pure all things are pure." You have done your part fearlessly and well, and in a popular manner, and I trust that your work may be productive of all the good you design by its publication.

Very faithfully,

GEO. ALEX. CROOKE.

OPINION OF LLOYD P. SMITH, Esq.

Librarian Philadelphia Library.

LIBRARY CO. OF PHILADELPHIA, FIFTH ST. BEL. CHESTNUT,
PHILADELPHIA, Sept. 1869.

It is an open question whether books *de secretis mulierum* should be written for the general public; but there is no doubt that, when they are written, it should be done by the regular faculty, and not by ignorant quacks. Dr. Napheys' "Physical Life of Woman" shows not only the scientific attainments of the author, but also a wide range of miscellaneous reading. The delicate subjects treated of are handled with a seriousness and earnestness becoming their importance, and the author's views are expressed in excellent English.

LLOYD P. SMITH.

OPINION OF S. W. BUTLER, M.D.

Editor of the Philadelphia "Medical and Surgical Reporter."

I have carefully examined "The Physical Life of Woman," and find it a work at once thoroughly representing modern science, and eminently adapted for family instruction. It is well suited to female readers, to whom it is especially addressed both in the matter it contains and in the delicacy with which points relating to their physiological life are mentioned.

S. W. BUTLER.

EXTRACT FROM LETTER RECEIVED FROM JOHN H. GRISCOM, M.D.

NEW YORK, Sept. 1869.

DR. NAPHEYS—

My Dear Sir: The "Physical Life of Woman" is a very scientific and intellectually written work, and contains almost all the physiological and sanitary facts and directions needed for the preservation of the health and longevity of the maiden, wife, and mother. It must prove attractive and useful for any lady who reads it.

Your sincere friend,

JOHN H. GRISCOM.

FROM THE NATIONAL BAPTIST, PHILA., DEC. 30, 1868.

We join in the cordial welcome which this book has received. There is no other work which tells so well just what every woman—and every considerate man also—ought to know. Maternity is the one great function of woman, according to God's ordinance, and for this marvellous and holy mission her physical, intellectual, and moral constitution has been designed. Dr Napheys, in his wise "Advice to maiden, wife, and mother," passes in review the cardinal facts respecting woman's physical life. The book is written in a very clear and simple style, so that no one can misunderstand it, while there is nothing to disturb or offend the most sensitive. A judicious mother would do her maturing daughters great service by first carefully reading this volume herself, and then have them read it under her guidance.

OPINION OF MRS. R. B. GLEASON, M.D.

ELMIRA, N. Y., Sept. 1869.

The advance sheets of "The Physical Life of Woman" have been read with much interest. In this book Dr. Napheys has well met a real need of the age. There are many things incident to woman's physical organization which she needs to know, and concerning which she still does not want to ask a physician, and may not have one at hand when she most desires the information. This book can be easily read and perfectly understood by those not familiar with medical terms. All matters of delicacy are treated with freedom, and still with a purity of thought and expression which is above criticism.

For many years we have been often asked for just such a book, and shall gladly commend it to the many wives and mothers who want for themselves and grown-up daughters such a book of helps and hints for home life.

MRS. R. B. GLEASON.

FROM PROFESSOR JOHN S. HART, LL D.

STATE NORMAL SCHOOL, TRENTON, N. J.

GEO. H. NAPHEYS, M.D.—

Dear Sir: I have read with attention the advance sheets of your book, "The Physical Life of Woman;" and take pleasure in saying that you have handled a most difficult and important subject with equal delicacy and ability.

Yours truly,

JOHN S. HART.

OPINION OF MARK HOPKINS, D.D., LL.D.,

President of Williams College.

"Your book is conscientiously written, and will be likely to do good."

FROM THE N. Y. EVANGELIST, NOV. 18, 1869.

This is a plain and practical treatise, prepared by a physician of skill and experience, in which he aims to furnish information to women, in their peculiar conditions and relations, married and single, so as to enable them to preserve their own health, and perform their duties to themselves and their children. The most delicate subjects are treated in language so chaste as not to offend any pure mind.

OPINION OF DR. R. SHELTON MACKENZIE.

PHILADELPHIA, Oct. 1869.

"Believing that such a work as Dr. Napheys' 'Physical Life of Woman,' giving a great deal of valuable information, explicitly and delicately, is likely to be of very essential importance to the fair sex, I cannot hesitate to express my favorable opinion of its object and execution."

LETTER RECEIVED FROM REV. GEO. BRINGHURST,

Rector of the P. E. Church of the "Messiah," Philadelphia.

PHILADELPHIA, Sept. 1869.

DR. GEO. H. NAPHEYS—

My Dear Sir: I have perused with considerable care and pleasure the work on the "Physical Life of Woman," and feel no hesitation in pronouncing it admirably composed, honest, succinct, refined, and worthy the companionship of every lady of this age. I hail its appearance with gratitude, and look upon it as a valuable contribution to those efforts which are making in various directions to elevate the tone of morals of the nineteenth century, and to enable mothers to discharge faithfully the duties they owe their children.

Sincerely yours,

GEORGE BRINGHURST.

FROM H. N. EASTMAN, M.D.,

Professor of Practical Medicine in Geneva Medical College.

GENEVA, Sept. 1869.

GEO. H. NAPHEYS, M.D.—

Dear Sir: I have just completed a careful reading of your advance sheets of "The Physical Life of Woman," and I unhesitatingly pronounce it an admirable work, and one especially needed at this time.

The book is written in a chaste, elevated, and vigorous style, is replete with instruction indispensable to the welfare and happiness of woman, and should be placed in the hands of every mature maiden and matron in our land.

H. N. EASTMAN.

EDITORIAL FROM PHILADELPHIA MEDICAL AND SURGICAL REPORTER.

It is a singular fact, that in this country, most of the works on medical and hygienic matters have been written by irregular practitioners in order to help on its legs some ism or pathy of their own. The public is really desirous of information about the great questions of life and health. It buys whatever is offered it, and cannot tell of course the tares from the wheat. In fact, as we have said, there has been very little wheat offered it. Scientific physicians do not seem to have taken the pains in this country, as in Germany, to expand sound medical information among the people.

We therefore welcome all the more warmly a work which, under any circumstances, would command our praise, advance sheets of which are now before us. The author is Dr. George H. Napheys, of this

sity, well known to all the readers of the 'Reporter" as a constant contributor to its pages for a number of years, a close student of therapeutics, and a pleasing writer. The title of the book is "The Physical Life of Woman; advice to the Maiden, Wife, and Mother." It is a complete manual of information for women, in their peculiar conditions and relations, married and single.

The style is simple, agreeable, and eminently proper and delicate, conspicuously so when treating of such difficult topics to handle in a popular book, yet so necessary to be handled, as the marital relations of husband and wife, the consummation of marriage, etc.

We do not doubt that this work will find as large a sale both in and out of the profession in this country, as the works of Bock and Klencke in Germany, and of Tilt and Chavasse in England.

FROM THE NASHVILLE JOURNAL OF MEDICINE AND SURGERY FOR NOVEMBER, 1869.

The outside of this book is more stylish and artistic than any the market has owed to the press this season. The type and paper of the inside are in keeping with the elegant exterior. The work contains much valuable matter, in a style peculiarly attractive. It is intended to treat woman as a rational being, to let her know much about herself as a woman, that from this knowledge she may prevent and therefore escape much of the suffering endured by her sex.

And who can do this but a physician? This may be regarded as the first attempt of the kind in this country.

FROM THE MEDICAL RECORD, NEW YORK, JAN. 15, 1870.

Doctor Napheys, in his work on "The Physical Life of Woman," has acquitted himself with infinite credit. The subject, which for a work of its size takes a very wide range, is treated in choice, nay elegant language, and we have not noticed a single expression upon the most delicate matter that could offend the most refined taste. There are, too, a great many interesting historical facts connected with the general topic, both in an ethical and physiological point of view, which show much discrimination in their production, and a good amount of sterling scholarship. To the medical reader there are many points in the book that are worthy of attention, prominent among which are remarks bearing upon the right of limitation of offspring. We sincerely hope that, for the real benefit of American women, it may meet with a hearty reception, and be productive of great good, in preventing many of those disorders now so rife in the community, which are solely the result of ignorance of the ordinary laws of female hygiene.

No one, however scrupulous, need fear to admit the work within the pale of his family circle, and place it, with confidence, in the hands of his daughters.

FROM THE NEW YORK MEDICAL GAZETTE, JAN. 8, 1870.

Though professedly written for popular instruction, this little book will not fail to instruct as well the professional reader. We cordially recommend the perusal of Dr. Napheys' book to every woman seeking a fuller acquaintance with her physical organism.

FROM THE BOSTON MEDICAL AND SURGICAL JOURNAL, NOV. 25, 1869.

Most valuable for the perusal of mothers, and of those fathers who may be equal to the task of advising sons liable to commit matrimony. The style—of the text—is unexceptionable. Words are not wasted, and those used are to the point. The volume is not a mere *resumé* of others' opinions; but the author has made the topics of which he treats his own.

FROM THE CHICAGO MEDICAL EXAMINER OF NOV. 1869.

This work is written in a plain and pleasing style, well calculated both to please and instruct. There is nothing of the *sensational* or imaginative character in it. On the contrary, its teachings are in strict accordance with scientific facts and good sense. Though designed specially for females, yet a careful perusal would be productive of much benefit to both sexes.

FROM THE METHODIST HOME JOURNAL, DEC. 4, 1869.

Hitherto, the subjects so honestly and so skilfully treated in this volume have, to a very great extent, been ruled out of the realm of popular knowledge, and information of this class sought only in a clandestine manner. The people have suffered by deplorable ignorance on those topics, which should be as familiar to us as the alphabet. Dr. Napheys, by his scientific handling of the physiological points which relate to health, training, and development, has rendered a great service to the world. This, the press, and public men, have not been slow to acknowledge. The book has gained unqualified praise, and well deserves it.

FROM THE PRESBYTERIAN, OF PHILADELPHIA, DEC. 4, '69.

A book which treats wisely and delicately of very important subjects, and subjects which ought to be treated by competent hands, instead of being left to quacks and the venders of nostrums. Dr. Napheys is evidently a conscientious and intelligent physician, and his counsels are such as may be put in the hands of all persons needing such counsels. We commend it for its judicious exposition of the laws of nature.

FROM THE NEW YORK CHRISTIAN UNION, JAN. 8, 1870.

Society owes a debt of gratitude to this brave and scientific physician for the unexceptionable way in which he has performed a work that has, up to the publication of this book, been a paramount need, not to be satisfied anywhere in the English language. If the volume contained only the chapter on the influence of the mother's mind upon her unborn child, we would recommend its purchase by every family in the United States.

FROM THE PHILA. EVENING TELEGRAPH, OCT. 6, 1869.

This is a work by a physician of reputation on the hygiene of woman, designed for popular use, and introducing a variety of topics not gene-

rally discussed outside of regular scientific medical works. Dr. Napheys writes with dignity and earnestness, and there is not a chapter in his book that may not be read by persons of both sexes. Of course such a work as this is intended for men and women of mature years, and it is not suitable to be left lying about for the gratification of idle curiosity. The author has been careful to write nothing that can possibly give offence, and he conveys much sound instruction that, if heeded by those to whom it is particularly addressed, will save much suffering.

FROM THE INDEPENDENT, NEW YORK, NOV. 11, 1869.

It required a brave but sensitively pure man to provide for the want which existed for some reliable medical instruction upon points which every woman and every married man ought to know, and few do. Dr. Napheys we do not know personally. But his book is at once brave and pure. It is written in such a spirit that she who really desires to learn the truths of which she cannot with justice to herself or others be ignorant, may do so without being shocked; while he who hopes to stimulate a vicious imagination by its perusal will turn from its pages disappointed away.

FROM REV. HENRY CLAY TRUMBULL,

Secretary of New England Department of Missions of the American Sunday-school Union.

HARTFORD, CT., Oct. 1869.

GEO. H. NAPHEYS, M.D.—

My Dear Sir: Understanding, from my long acquaintance with you, your thoroughness of mental culture, your delicacy of sentiment, and your sound good sense, I was prepared to approve heartily the tone and style of your new work, "The Physical Life of Woman," when its advance sheets were first placed in my hands.

A close examination of it convinces me that it is a book which can be read by every woman to her instruction and advantage. Its manner is unexceptionable. Its style is remarkably simple Its substance evidences your professional knowledge and your extensive study. I believe it needs only to be brought to notice to commend itself widely. I think you have done an excellent work in its preparation.

Sincerely your friend,

H. CLAY TRUMBULL.

FROM THE REV. W. H. H. MURRAY,

Pastor of the Park Street Church, Boston, Mass.

DEC. 2, 1871.

It is with sincere gratitude to the author that I give my endorsement to the book entitled "The Physical Life of Woman." Never was such a work more needed anywhere, or in any age, than it is in America at this time. I should rejoice at its introduction among the people until every wife and mother in the country and the world had a copy in her possession. In it the author has indeed given needed instruction and warning. He deserves the thanks of every Christian and well-wisher of the race.

W. H. H. MURRAY.

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